ORDER NO.SM–96043

Service Manual

Colour Television

SUPPLEMENT–1

EURO 2 Chassis

TX–28S1S

NOTE:
THIS SUPPLEMENT SHOULD BE USED IN CONJUNCTION WITH THE TX–28S1DR/TX–25S1DR SERVICE MANUAL

TX–25S1S

Specifications

Power Source :	220 – 240 V AC, 50Hz	
Power Consumption :	137W	
Aerial Impedance :	75Ω unbalanced, Coaxial Type	
Receiving System :	PAL B/G, D/K, H PAL – 60 SECAM B/G, D/K MNTSC, NTSC (AV Only)	
Receiving Channels :	VHF E2 – E12	
VHF H1 – H2 (ITALY)	VHF A – H (ITALY)	
VHF R1 – R2	VHF R3 – R5	
VHF R6 – R12	UHF E21 – E69	
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)	
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)	
Intermediate Frequency :		
Video	38.9MHz	
Sound	33.4MHz,33.16MHz 32.4MHz,33.05MHz	
Colour	34.47MHz (PAL) 34.65MHz,34.5MHz (SECAM)	
Video / AudioTerminals :		
AUDIO MONITOR OUT	Audio (RCA x 2)	500 mV rms 1kΩ
AV1 IN	Video (21 pin) Audio (21 pin) RGB (21 pin)	1 Vp–p 75Ω 500 mV rms 10kΩ
AV1 OUT	Video (21 pin) Audio (21 pin)	1 Vp–p 75Ω 500 mV rms 1kΩ
AV2 IN	Video (21 pin) Audio (21 pin) S–Video IN (21 pin)	1 Vp–p 75Ω 500 mV rms 10 kΩ Y : 1 Vp–p 75Ω C : 0.3 Vp–p 75Ω
AV2 OUT	Video (21 pin) Audio (21 pin)	1 Vp–p 75Ω 500 mV rms 1kΩ
AV3 IN	Audio (RCA x 2) Video (RCA x 1)	500 mV rms 10kΩ 1 Vp–p 75Ω
High Voltage :	28kV ±1kV at zero beam current	
Picture Tube :	A66ECF50X12	70 cm
Visible screen size:	66cm	
Audio Output :		
Internal Speaker	2 x 15 W (Music Power) 8 Ω Impedance	
Headphones	8 Ω Impedance	
Accessories supplied :	Remote Control 2 x R6 (UM3) Batteries	
Dimensions :	Height : 582mm Width : 752mm Depth : 462mm	
Net Weight	32kg	

Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

Specifications

Power Source :	220 – 240 V AC, 50Hz	
Power Consumption :	135W	
Aerial Impedance :	75Ω unbalanced, Coaxial Type	
Receiving System :	PAL B/G, D/K, H PAL – 60 SECAM B/G, D/K MNTSC, NTSC (AV Only)	
Receiving Channels :	VHF E2 – E12	
VHF H1 – H2 (ITALY)	VHF A – H (ITALY)	
VHF R1 – R2	VHF R3 – R5	
VHF R6 – R12	UHF E21 – E69	
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)	
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)	
Intermediate Frequency :		
Video	38.9MHz	
Sound	33.4MHz,33.16MHz 32.4MHz,33.05MHz	
Colour	34.47MHz (PAL) 34.65MHz,34.5MHz (SECAM)	
Video / AudioTerminals :		
AUDIO MONITOR OUT	Audio (RCA x 2)	500 mV rms 1kΩ
AV1 IN	Video (21 pin) Audio (21 pin) RGB (21 pin)	1 Vp–p 75Ω 500 mV rms 10kΩ
AV1 OUT	Video (21 pin) Audio (21 pin)	1 Vp–p 75Ω 500 mV rms 1kΩ
AV2 IN	Video (21 pin) Audio (21 pin) S–Video IN (21 pin)	1 Vp–p 75Ω 500 mV rms 10 kΩ Y : 1 Vp–p 75Ω C : 0.3 Vp–p 75Ω
AV2 OUT	Video (21 pin) Audio (21 pin)	1 Vp–p 75Ω 500 mV rms 1kΩ
AV3 IN	Audio (RCA x 2) Video (RCA x 1)	500 mV rms 10kΩ 1 Vp–p 75Ω
High Voltage :	28kV ±1kV at zero beam current	
Picture Tube :	A59ECF50X12	
Visible screen size:	59cm	
Audio Output :		
Internal Speaker	2 x 15 W (Music Power) 8 Ω Impedance	
Headphones	8 Ω Impedance	
Accessories supplied :	Remote Control 2 x R6 (UM3) Batteries	
Dimensions :	Height : 531mm Width : 601mm Depth : 440mm	
Net Weight	25kg	

Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

Panasonic

DIFFERENCES FOR TX – 28S1S AND TX – 25S1S

	TX – 28S1DR	TX – 28S1S	TX – 25S1DR	TX – 25S1S
DESCRIPTION	ORIGINAL	NEW	ORIGINAL	NEW
4) CRT ⚠	A66ECF40X12	A66ECF50X12	A59ECF20X12	A59ECF50X12
6) DEGAUSS COIL ⚠	TLK8E05116	TLK8E05125	TLK8E05115	TLK8E05120
7) Y PCB ⚠	TNP117070AA	TNP117070AC	TNP117070AA	TNP117070AC
9) E PCB ⚠	TNP197091AL	TNP197091BM	TNP197091AK	TNP197091BL
10) B PCB ⚠	TNP117064AD	TNP117064AH	TNP117064AD	TNP117064AH
17) B/COVER LABEL	TBM8E1473	TBM8E1555	TBM8E1479	TBM8E1556
INST BOOK RUSSIAN ⚠	TQB8E2024L–1	TQB8E2197L	TQB8E2024L–1	TQB8E2197L
INST BOOK BULGARIAN ⚠	TQB8E2024M–1	TQB8E2197M	TQB8E2024M–1	TQB8E2197M
CARTON	TPC8E4506	TPC8E4566	TPC8E4481	TPC8E4567
EPROM	27C010–09ADR	27C010–28S1S	27C010–09ADR	27C010–25S1S
EAROM	X24C16P–J1DR	X24C081VJ	X24C16P–M1DR	X24C081V

COMMON PARTS FOR TX – 28S1S AND TX – 25S1S

CR No	DESCRIPTION	ORIGINAL	NEW
C007	CAPACITOR	ECUV1H104ZFX	NIL
C008	CAPACITOR	NIL	ECQB1H104J
C011	CAPACITOR	NIL	ECUV1H104ZFX
C146	CAPACITOR	NIL	ECUV1H104ZFX
C170	CAPACITOR	NIL	ECUV1H331KBX
C606	CAPACITOR	NIL	ECUV1H040CCX
C607	CAPACITOR	NIL	ECUV1H040CCX
C625	CAPACITOR	ECEA1HNR22	ECEA1HNR33
C3020	CAPACITOR	NIL	ECCF1H070DC
C3026	CAPACITOR	ECEA1HUR47	ECA1CM470GB
C3027	CAPACITOR	ECEA1HUR47	ECA1CM470GB
D904	DIODE	NIL	MA165TA5
D906	DIODE	NIL	RLS72TE–11
D1204	DIODE	TVSS1WBS10	TVSS1WBS20
D1210	DIODE	NIL	MA165TA5
I351	RGB AMPLIFIER	TDA6103Q	TDA6103Q–N3
I601	VIDEO I.C.	VDP3108–25	VDP3108APPA1
I2101	AUDIO I.C.	MSP3400	MSP3400CPPC6
I3502	TEXT I.C.	TPU3041–19	TPU3041–22
JA1	RESISTOR	NIL	ERJ6GEY0R00
JA27	RESISTOR	NIL	ERJ6GEY0R00
JA39	RESISTOR	NIL	ERJ6GEY0R00
JK3102	AV TERMINAL	NIL	TJB16673

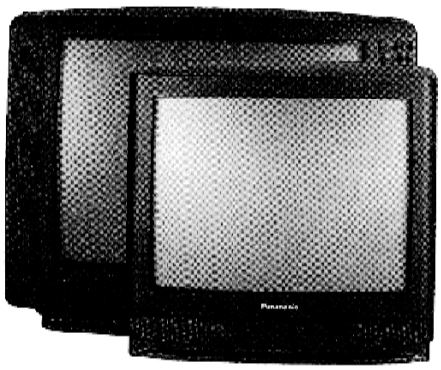
CR No	DESCRIPTION	ORIGINAL	NEW
JSE036	RESISTOR	NIL	ERJ6GEY0R00
JSE038	RESISTOR	NIL	ERJ6GEY0R00
J106	COIL	NIL	EXCELSA35T
J107	COIL	NIL	EXCELSA35T
L002	COIL	TLT047K991R	ELESN4R7KA
L105	COIL	TLT100K991R	TLT082K991R
L111	COIL	ELESNR82MA	TLTR82K991R
L801	COIL	298–19711	EXCELSA24T
L2102	COIL	TLT3R9K991R	TLT039K991R
R122	RESISTOR	ERJ6GEYJ470	ERJ6GEYJ331
R302	RESISTOR	ERJ6GEYJ391	ERJ6GEYJ471
R306	RESISTOR	ERJ6GEYJ391	ERJ6GEYJ471
R310	RESISTOR	ERJ6GEYJ391	ERJ6GEYJ471
R706	RESISTOR	ERJ6GEYJ332	ERJ6GEYJ222
R707	RESISTOR	ERJ6GEYJ122	ERJ6GEYJ911
R813	RESISTOR	ERD50FJ334	ERD50FJ274
R815	RESISTOR	NIL	ERDS1TJ563
R818	RESISTOR	ERD50FJ564	ERD50FJ104
R819	RESISTOR	ERD50FJ564	ERD50FJ104
R904	RESISTOR	ERJ6GEYJ102	ERJ6GEYJ222
R928	RESISTOR	ERD25TJ2R7	ERD25TJ5R6
R930	RESISTOR	ERD25TJ2R7	ERD25TJ5R6
R3042	RESISTOR	ERJ6GEYJ472	ERJ6GEYJ682
R3049	RESISTOR	ERJ6GEYJ750	ERJ6GEYJ680

ORDER NO. SM–95032

Service Manual

Colour Television

TX–28S1DR
TX–25S1DR
EURO–2 Chassis



Specifications for TX–28S1DR

Power Source :	220 – 240 V AC, 50Hz	
Power Consumption :	137W	
Aerial Impedance :	75Ω unbalanced, Coaxial Type	
Receiving System :	PAL B/G, D/K PAL – 60 SECAM B/G, D/K	
Receiving Channels :	VHF E2 – E12	
VHF H1 – H2 (ITALY)	VHF A – H (ITALY)	
VHF R1 – R2	VHF R3 – R5	
VHF R6 – R12	UHF E21 – E69	
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)	
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)	
Intermediate Frequency :		
Video	38.9MHz	
Sound	33.4MHz,33.16MHz	
	32.4MHz,33.05MHz	
Colour	35.07MHz,34.47MHz,34.5MHz	
Video / AudioTerminals :		
AV1 IN	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 10kΩ
	RGB (21 pin)	
AV1 OUT	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
AV2 IN	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 10 kΩ
	S–Video IN	Y : 1V p–p 75Ω
	(21 pin)	C : 0.3V p–p 75Ω
AV2 OUT	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
	Selectable output (21 pin)	
AV3 IN	S–Video IN	Y : 1V p–p 75Ω
	(4–pin)	C : 0.3V p–p 75Ω
	Audio (RCA x 2)	500mV rms 10kΩ
	Video (RCA x 1)	1V p–p 75Ω
High Voltage :	28 kV ± 1kV at zero beam current	
Picture Tube :	A66ECF40X12	
Visible screen size:	66 cm	
Audio Output :		
Internal Speaker	2 x 15 W (Music Power) 8 Ω Impedance	
Headphones	8 Ω Impedance	
Accessories supplied :	Remote Control R6 (UM3) Battery	
Dimensions :	Height : 582 mm Width : 752 mm Depth : 472 mm	
Net Weight	32kg	

Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

Specifications for TX–25S1DR

Power Source :	220 – 240 V AC, 50Hz	
Power Consumption :	135W	
Aerial Impedance :	75Ω unbalanced, Coaxial Type	
Receiving System :	PAL B/G, D/K PAL – 60 SECAM B/G, D/K	
Receiving Channels :	VHF E2 – E12	
VHF H1 – H2 (ITALY)	VHF A – H (ITALY)	
VHF R1 – R2	VHF R3 – R5	
VHF R6 – R12	UHF E21 – E69	
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)	
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)	
Intermediate Frequency :		
Video	38.9MHz	
Sound	33.4MHz,33.16MHz	
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Colour	35.07MHz,34.47MHz,34.5MHz	
Video / AudioTerminals :		
AV1 IN	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 10kΩ
	RGB (21 pin)	
AV1 OUT	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
AV2 IN	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 10 kΩ
	S–Video IN	Y : 1V p–p 75Ω
	(21 pin)	C : 0.3V p–p 75Ω
AV2 OUT	Video (21 pin)	1V p–p 75Ω
	Audio (21 pin)	500mV rms 1kΩ
	Selectable output (21 pin)	
AV3 IN	S–Video IN	Y : 1V p–p 75Ω
	(4–pin)	C : 0.3V p–p 75Ω
	Audio (RCA x 2)	500mV rms 10kΩ
	Video (RCA x 1)	1V p–p 75Ω
High Voltage :	28 kV ± 1kV at zero beam current	
Picture Tube :	A59ECF20X12	
Visible screen size:	59 cm	
Audio Output :		
Internal Speaker	2 x 15 W (Music Power) 8 Ω Impedance	
Headphones	8 Ω Impedance	
Accessories supplied :	Remote Control R6 (UM3) Battery	
Dimensions :	Height : 531 mm Width : 691 mm Depth : 439 mm	
Net Weight	25kg	

Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

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SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the AC outlet.
5. Potentials as high as 29kV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture to the chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials , connectors, control shafts etc. When the exposed metallic part has a return path to the chassis the reading should be between 4M ohm and 20M ohm. When the exposed metal does not have a return path to the chassis the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed Metallic part and check the voltage at each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4 Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

HOT CHECK CIRCUIT

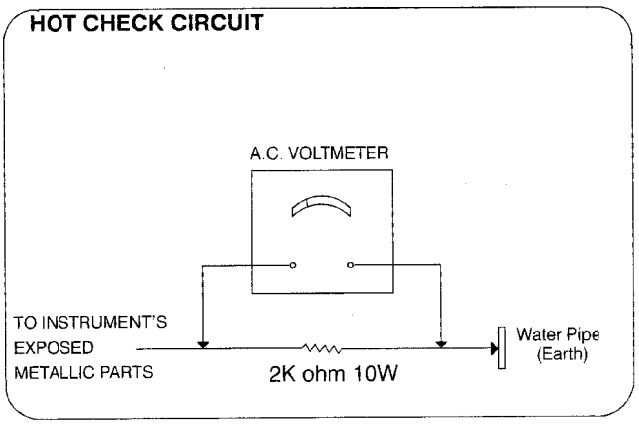


Fig.1

X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service ensure that the jig is capable of handling 29kVwithout causing X-Radiation.

NOTE : It is important to use an accurate periodically calibrated high voltage meter

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate 28kV ±1kV if the meter indication is out of tolerance, immediate service and correction is required to prevert the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

SERVICE HINTS TX-28S1DR

HOW TO REMOVE THE REAR COVER

1. Remove the 6 screws (A) as shown in Fig.3/Fig.4.

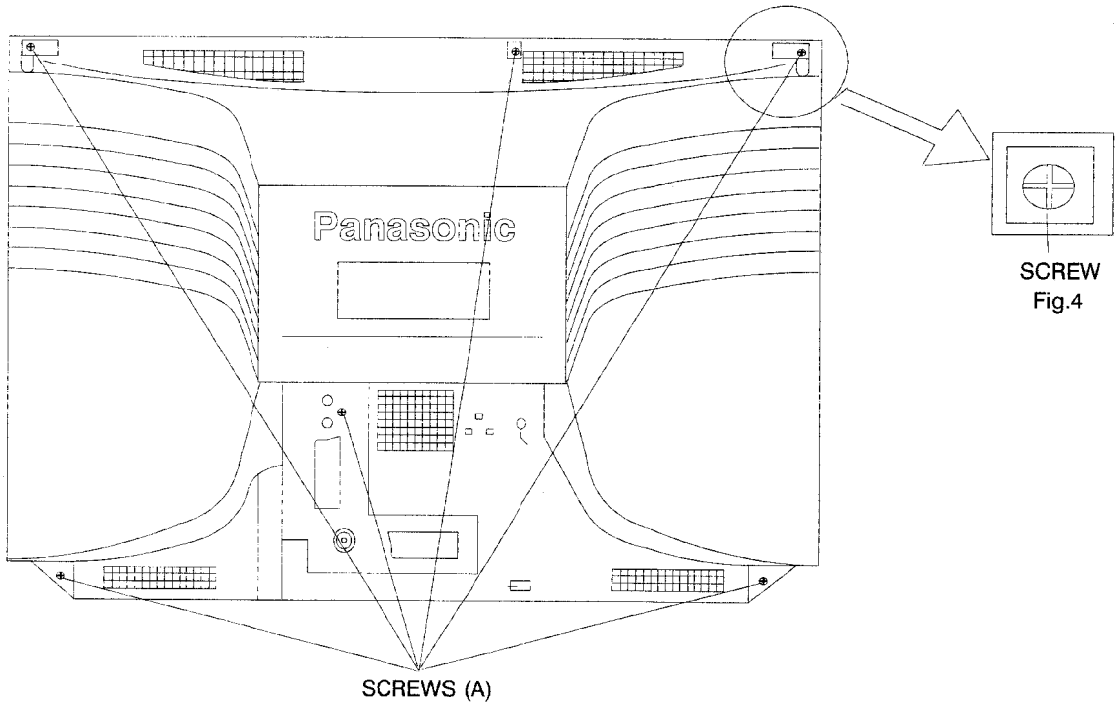


Fig.4

Fig.3.

LOCATION OF CONTROLS

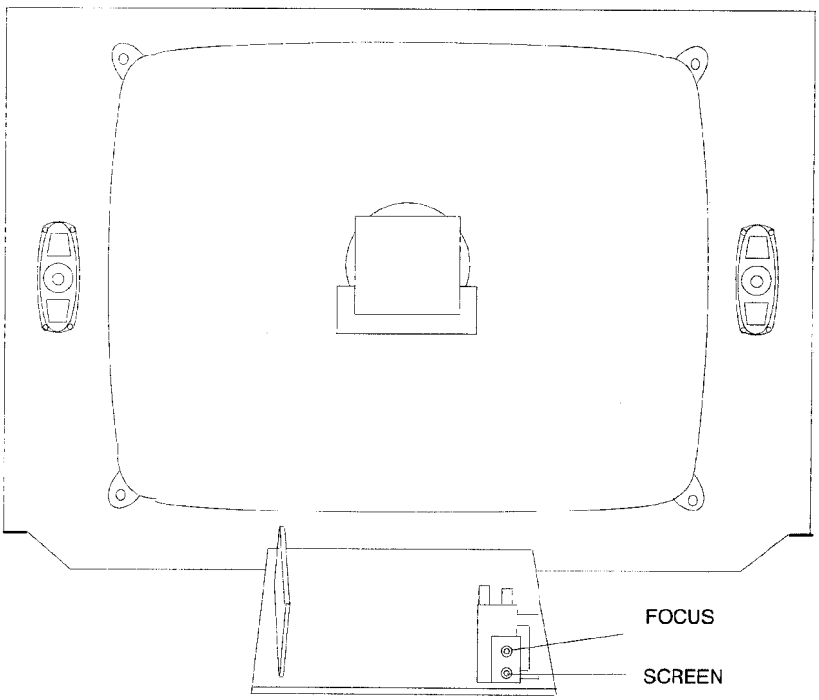


Fig.2

SERVICE HINTS TX-25S1DR

HOW TO REMOVE THE REAR COVER

1. Remove the 5 fixing screws (A) as shown in Fig.2

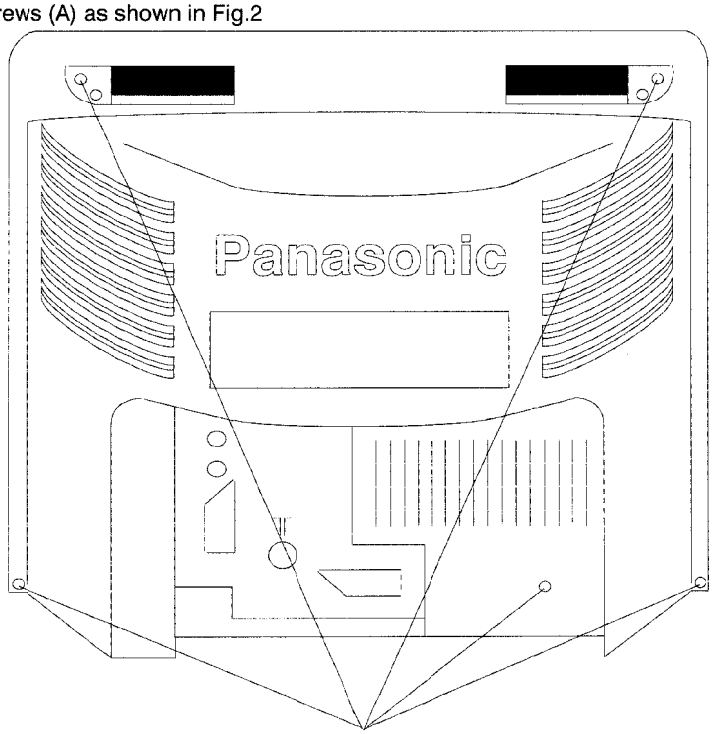


Fig.2.

LOCATION OF CONTROLS

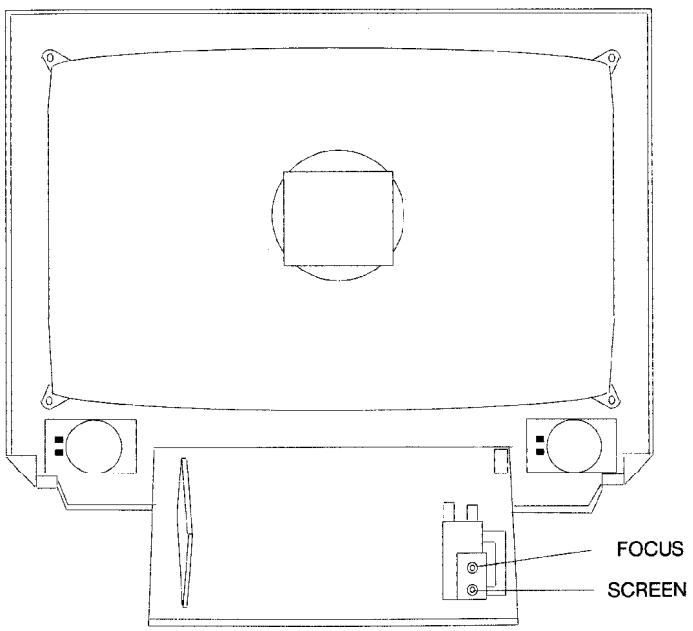


Fig.3.

HOW TO MOVE THE CHASSIS INTO THE SERVICE POSITION (TX-25S1DR ONLY)

1. Insert 1 of the backcover screws into the rib on the left hand side of the cabinet as shown in Fig.4.
2. Hold and lift the rear of the E- PCB chassis and gently pull the chassis toward you as shown in fig.5.
3. Release the respective wiring clips and rotate the chassis horizontally through 90°, anti-clockwise, shown in Fig.6, then elevate the front of the chassis as shown in fig.8.
4. Clip the chassis frame onto the screw in the rib of the cabinet, shown in Fig.7/8.
5. Locate the base of the chassis frame into the recess marked A, shown in Fig.8.
6. After servicing remove the screw and ensure all wiring is returned to its original position before returning the receiver to the customer.

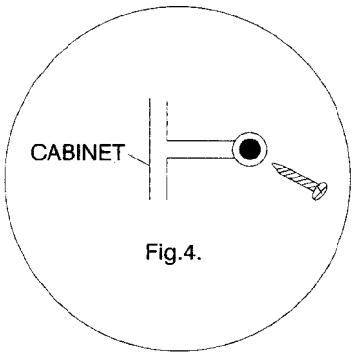


Fig.4.

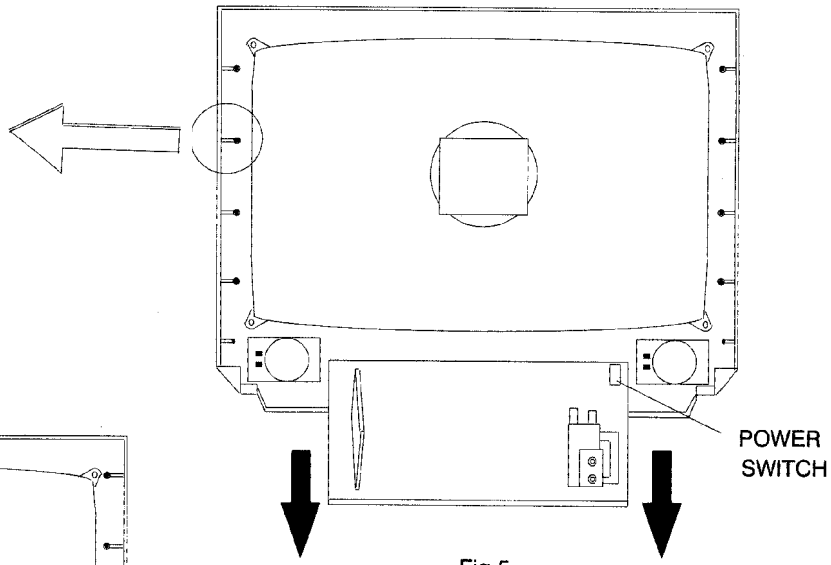


Fig.5.

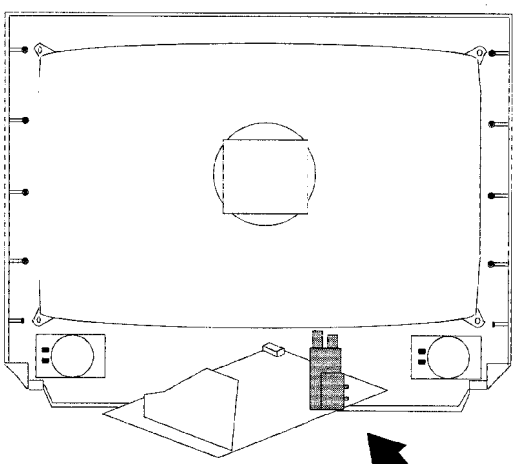


Fig.6.

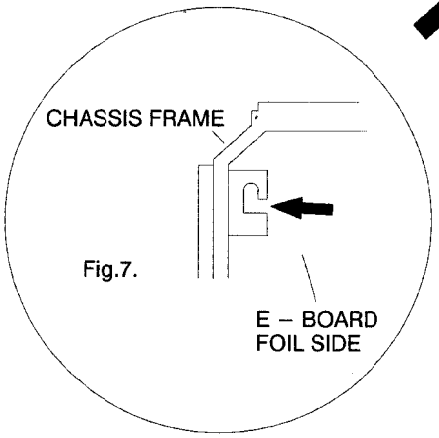


Fig.7.

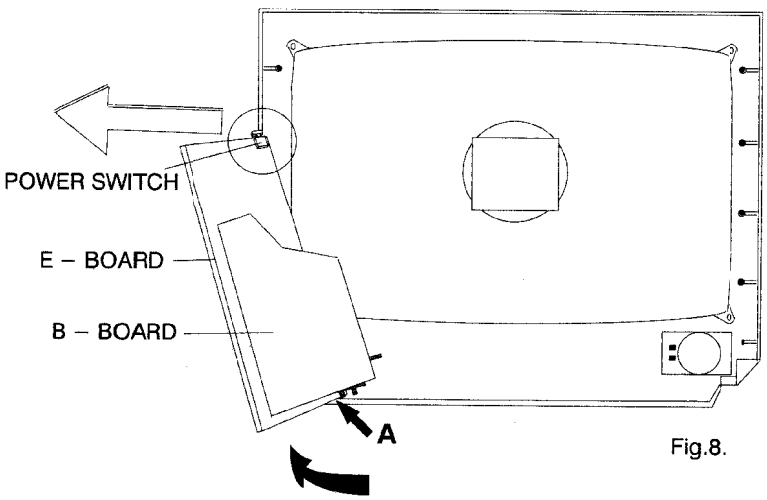


Fig.8.

ADJUSTMENT PROCEDURE

The remote control is used for entering and storing adjustments, with the exception of cut-off adjustments which must always be done prior to service adjustment. Perform adjustments in accordance with screen display. The display on the screen also specifies the CCU variants as well as the approx. setting values. The adjustment sequence for the service mode is indicated below.

1. Set the Bass to maximum position, set the Treble to minimum position, press the F button followed by the volume down button on the customer controls at the front of the TV and at the same time press the Reveal button on the remote control, this will place the TV into the Service Mode.
2. Press the RED / GREEN buttons to step up / down through the functions.
3. Press the YELLOW / BLUE buttons to alter the function values.
4. Press the STORE button after each adjustment has been made to store the required values.
5. To exit the Service Mode press the Normalisation button..

NOTE: This TV also has the option of using a Memory Pack which enables you to copy the preset TV channels into the Memory Pack and then download them onto this or any other EURO-2 TV set.

TV to Memory Pack process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:-

   Program
   External>>TV

3. Press the blue button on the remote control. The screen will show:-

   Program
   TV>>External

4. Press the STORE button on the TV. The screen will show:-

   Storing

5. All the tuning information stored inside the TV will now be transferred to the Memory Pack. This process will take 2-3 minutes to complete and when finished the screen will show:-

   OK!

Memory Pack to TV Process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:-

   Program
   External>>TV

3. Press the STORE button on the TV. The screen will show:-

   Loading

4. All the tuning information stored inside the Memory Pack will now be transferred to the TV. This process will take 2-3 minutes to complete and when finished the screen will show:-

   OK!

5. The tuning information from the Memory Pack has now been copied into the TV
6. To exit from the Service Mode press the Normalisation button.
7. The process has now been completed and the Memory Pack can now be removed.

Errors

If an error occurs while using the Memory Pack the TV will detect this and the screen will show:-

Program
Error!

If this happens then press the Normalisation button and repeat the process that was being used. If the errors continue to occur then check the connectors between the TV and the memory pack and check the 9V battery inside the memory pack.

ADJUSTMENT PROCEDURE

Item/Preparation	Adjustments
+B SET–UP 1. Recieve a window pattern 2. Set the controls: Brightness minimum Contrast minimum Volume minimum	1. Set the +B voltage up as follows: Adjust **R811** so that **B2** shows 147V ± 1V 2. Confirm the following voltages. **B1** 203 ± 10V **B6** 12 ± 0.5V **B3** 27 ± 1V **B7** 5 ± 0.1/–0.25V **B4** 35.5 ± 1V **B8** 5 ± 0.25V **B5** 15.5 ± 1V **U33** 31 ± 1V
RF AGC 1. Receive a test pattern. 2. Connect an oscilloscope between the tuner RF AGC and ground. 3. Set the oscilloscope gain range to 1V/div.	1. Check that the noise becomes large when the RF AGC VR **R126** is turned counterclockwise. After the check turn it clockwise. 2. Gradually turn the RF AGC VR anti–clockwise, and set the RF AGC VR to the point where the RF AGC voltage is just falling to a point where this voltage drops by 0.2V from the maximum value.
CUT OFF 1. Receive a widow pattern. 2. Degauss the tube externally. 3. Set the TV into Service Mode 1. 4. Select Cutoff DC mode.	1. Confirm then value is 128 and select Ug2 mode noting colour with largest value 2. Turn the screen VR until a colour reaches 20 ~ 30. 3. Connect an oscilloscope to the cathode with the biggest value colour. 4. Select Cutoff DC mode and adjust Cutoff pulse to 159V +/– 5V. 5. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 120 +/– 100 first.

SELF CHECK

Self check is used to automatically check the Bus Lines and Hexadecimal code of the TV set.
To get into the Self Check mode press the F button followed by the volume down button on the customer controls at the front of the TV at the same time pressing the Status button, on the Remote Control, and the screen will show:–

1	ok	Tuner	11	– –	Dolby IC for C/R
2	ok	VIF	12	ok	P S MODE
3	ok	EEPROM	13	ok	P TA0
4	– –	Sound AV switch1	14	ok	P TA1
5	ok	Video AV switch1	15	ok	P TA2
6	ok	VDP	16	ok	P TA3
7	ok	TPU	17	ok	P SDA
8	ok	MSP	18	ok	P SCL1
9	– –	Dolby Sub	19	ok	P SCL3
10	– –	Dolby IC for L/R	20	ok	P SCL4

If the CCU ports have been checked and found to be incorrect then "– –" will appear in place of "OK".

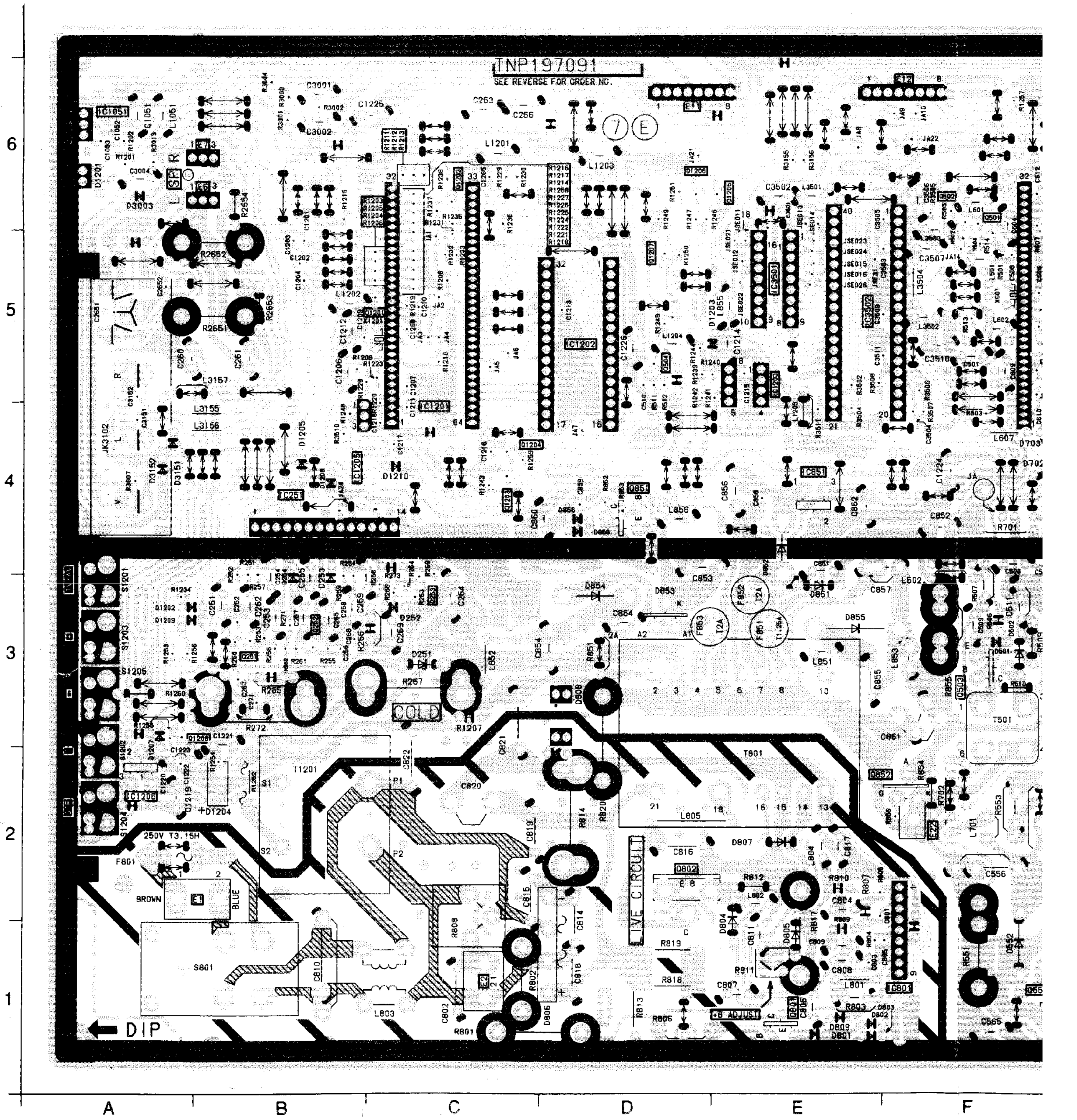
			Hex codes
21	ok	P SBLED	7A
22	ok	P OFF	62
23	ok	P DEFL	26
24	ok	P RAM	54
			85

ALIGNMENT SETTINGS (The figures used below are nominal and used for representative purposes only)

Alignment Function	TX-28S1DR	TX-25D1DR	Settings / Special features
1. Vertical amplitude	V-AMP 051	V-AMP 063	Optimum setting
2. Vertical symmetry	V-SYM 013	V-SYM 002	
3. Vertical linearity	V-LIN 012	V-LIN -020	
4. Vert. D.C.	Vert. D.C. 000	Vert.D.C. 000	No adjustment
5. V-Pos.	V. Pos. 003	V. Pos 005	Optimum setting
6. Horizontal amplitude	H-AMP -033	H-AMP -044	Optimum setting
7. Horizontal position	H-POS 049	H-POS 542	
8. Text Position	TEXT POSITION 045	TEXT POSITION 049	Optimum setting
9. EW-amplitude	E-W-AMP 1 -058	E-W-AMP 1 -059	Optimum setting
10. EW-amplitude	E-W-AMP 2 023	E-W-AMP 2 044	Optimum setting
11. Trapezium-comp	TRAPEZ-1 -014	TRAPEZ-1 000	Optimum setting
12. Trapezium- comp	TRAPEZ-2 012	TRAPEZ-2 -009	Optimum setting
13. Colour VCO	Colour VCO 015	Colour VCO 006	Press either Blue or Yellow buttons to effect automatic adjustment
14. Cut-off DC	Cut-off DC 050	Cut-off DC 050	No adjustment
15. Ug2 Test	Ug 2 Test: 107 / 021 / 023	Ug 2 Test: 094 / 044 / 020	Select Cutoff DC in Service Mode mode and confirm the value is 128. Select Ug 2 Test noting colour with largest value, adjust on FBT until a colour reaches 20 ~ 30. Connect an oscilloscope to the cathode of the biggest value colour, select Cutoff DC mode and adjust get Cutoff pulse voltage to 159±5V. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 50±10 first.
16. Cutoff	Cutoff: 045 / 055 / 050	Cutoff: 057 / 064 / 056	Press the GREEN button to step through the settings. Adjust for optimum.
17. White	White: 224 / 255 / 237	White: 200 / 255 / 246	Press the GREEN button to step through the settings. Adjust for optimum.

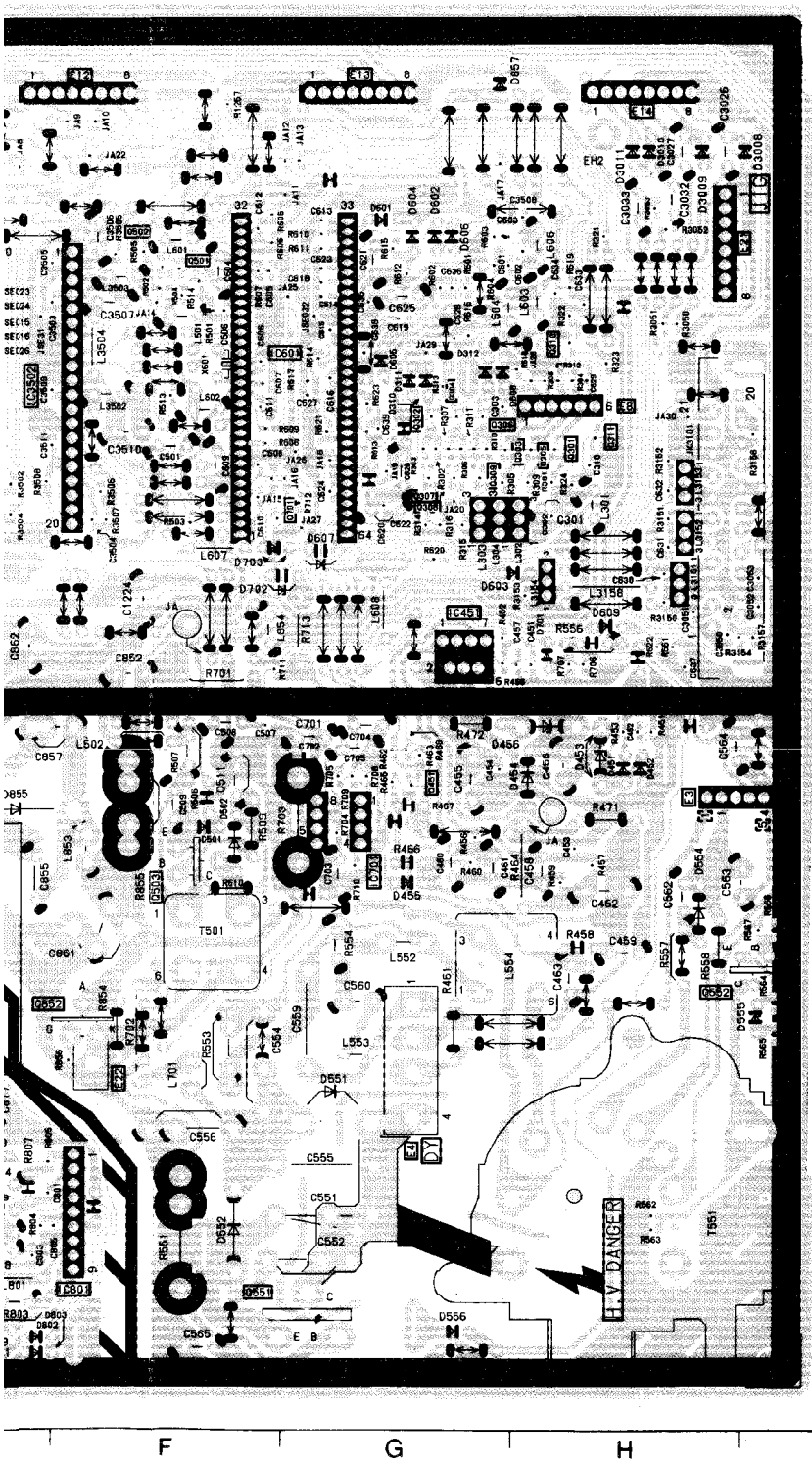
CONDUCTOR

E – BOARD TNP197091



NDUCTOR VIEWS

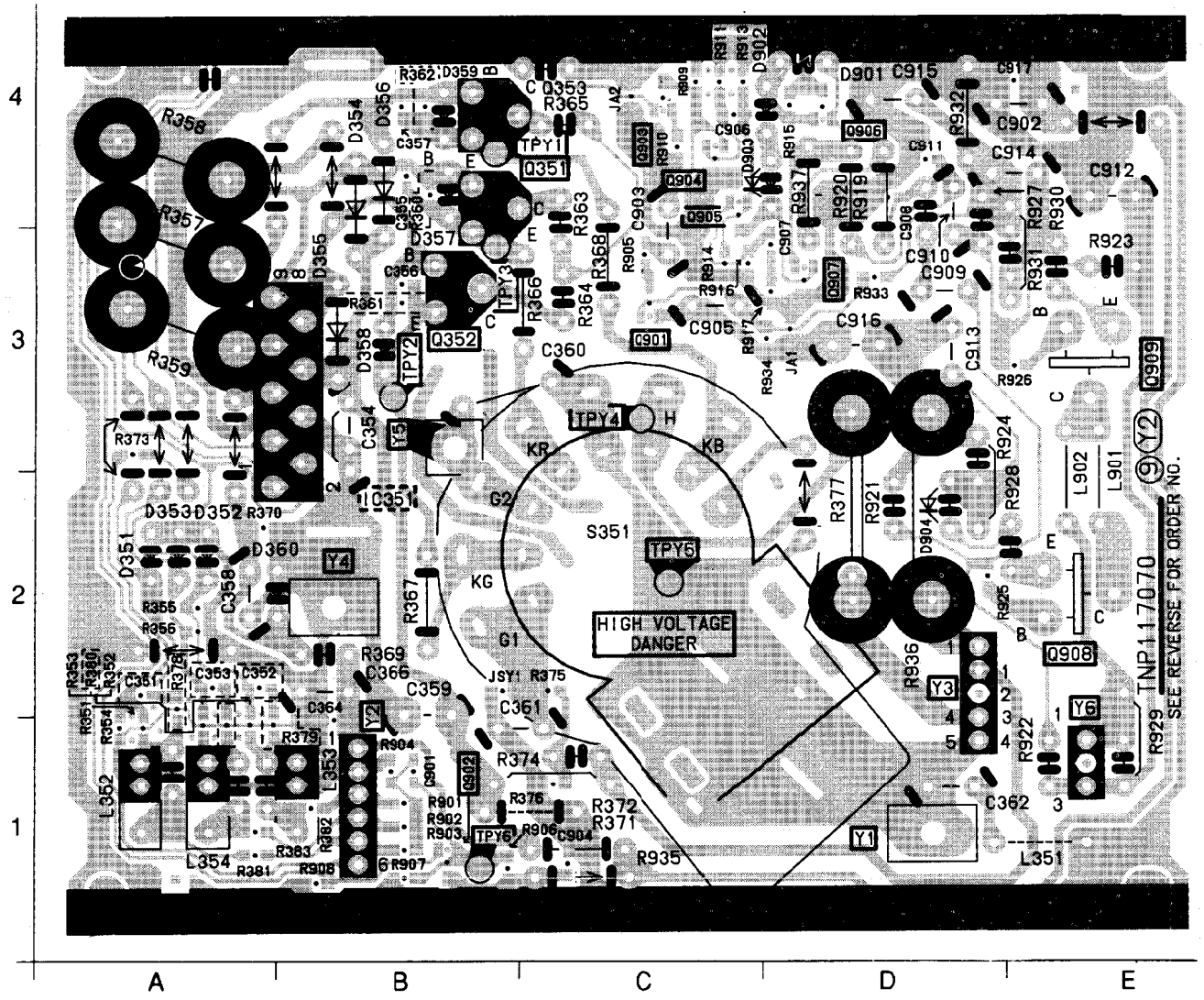
091



F G H I

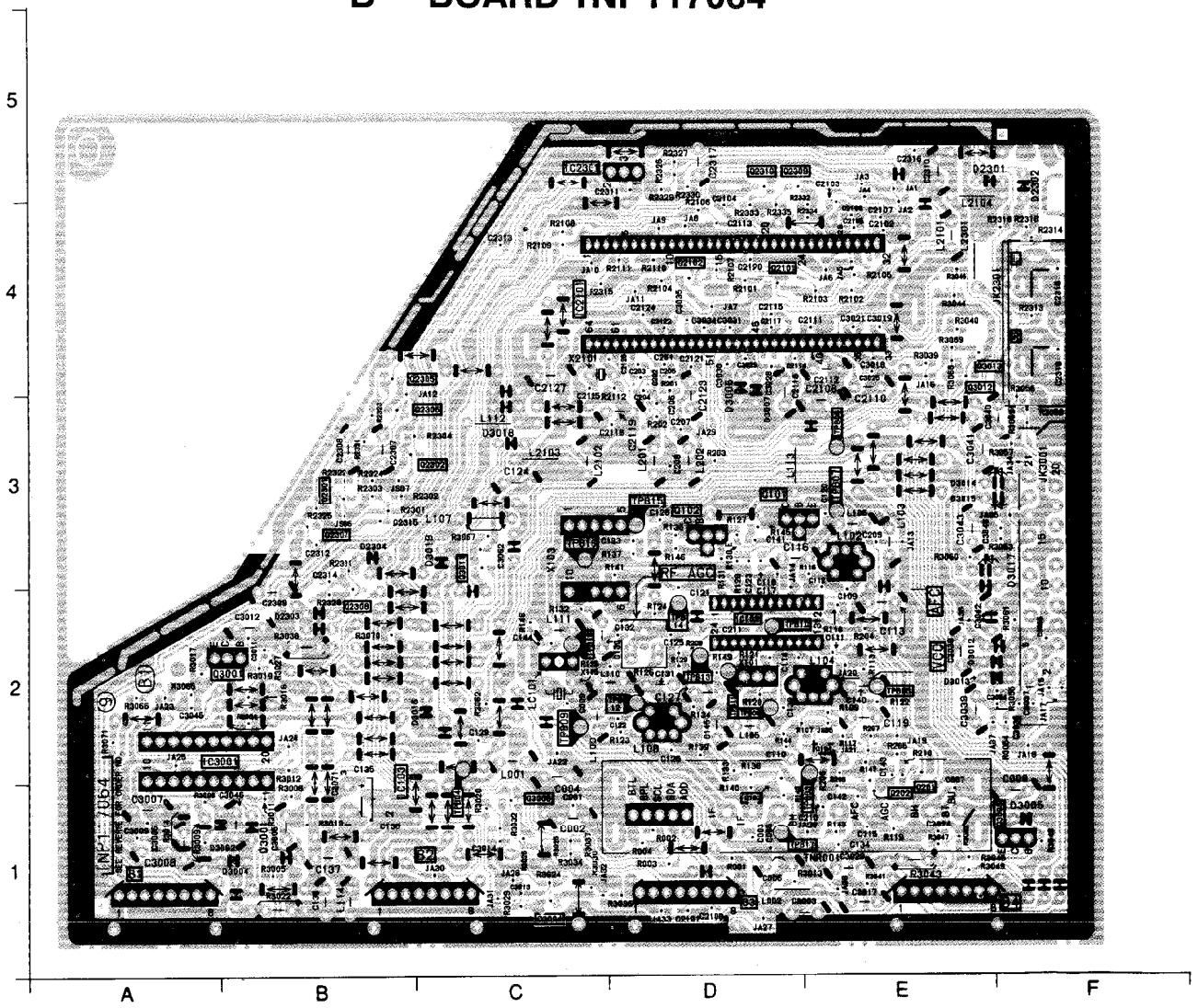
TRANSISTORS		DIODES		DIODES		I.C'S	
Q251	B3	D251	C3	D801	E1	I.C.251	B4
Q252	B3	D252	C3	D802	E1	I.C.451	G4
Q253	C3	D253	B3	D803	E1	I.C.701	G3
Q301	H5	D254	B3	D804	E1	I.C.801	F1
Q302	G5	D310	G5	D805	E1	I.C.851	E4
Q303	H5	D311	G5	D806	D1	I.C.1051	A6
Q305	H5	D312	G5	D808	D3	I.C.1201	C4
Q306	G5	D451	H3	D809	E1	I.C.1202	D5
Q307	G5	D452	H3	D851	E3	I.C.1203	E5
Q308	G4	D453	H3	D852	E4	I.C.1205	B4
Q309	G5	D454	H3	D853	D3	I.C.1206	A2
Q310	H5	D455	G3	D854	D3	I.C.3501	E5
Q311	H5	D456	G3	D855	E3	I.C.3502	E5
Q451	G3	D501	F3	D856	D4		
Q501	F6	D502	F3	D857	G6		
Q502	F6	D551	G2	D858	D4		
Q503	F3	D552	F1	D1201	A6		
Q504	D5	D554	H3	D1202	A3		
Q551	F1	D555	H2	D1203	D5		
Q552	H2	D556	G1	D1204	B2		
Q701	G5	D601	G6	D1205	B4		
Q801	E1	D602	G6	D1207	A2		
Q802	D2	D603	G4	D1208	B4		
Q851	D4	D604	G6	D1209	A3		
Q852	E2	D605	G5	D1210	C4		
Q1202	C6	D606	G6	D3003	A6		
Q1203	C4	D607	G4	D3008	H6		
Q1204	C4	D608	G5	D3009	H6		
Q1205	E6	D609	H4	D3010	H6		
Q1206	D6	D701	H4	D3151	A4		
Q1207	D5	D702	F4	D3152	A4		
Q1208	B3	D703	F4				

Y – BOARD TNP117070



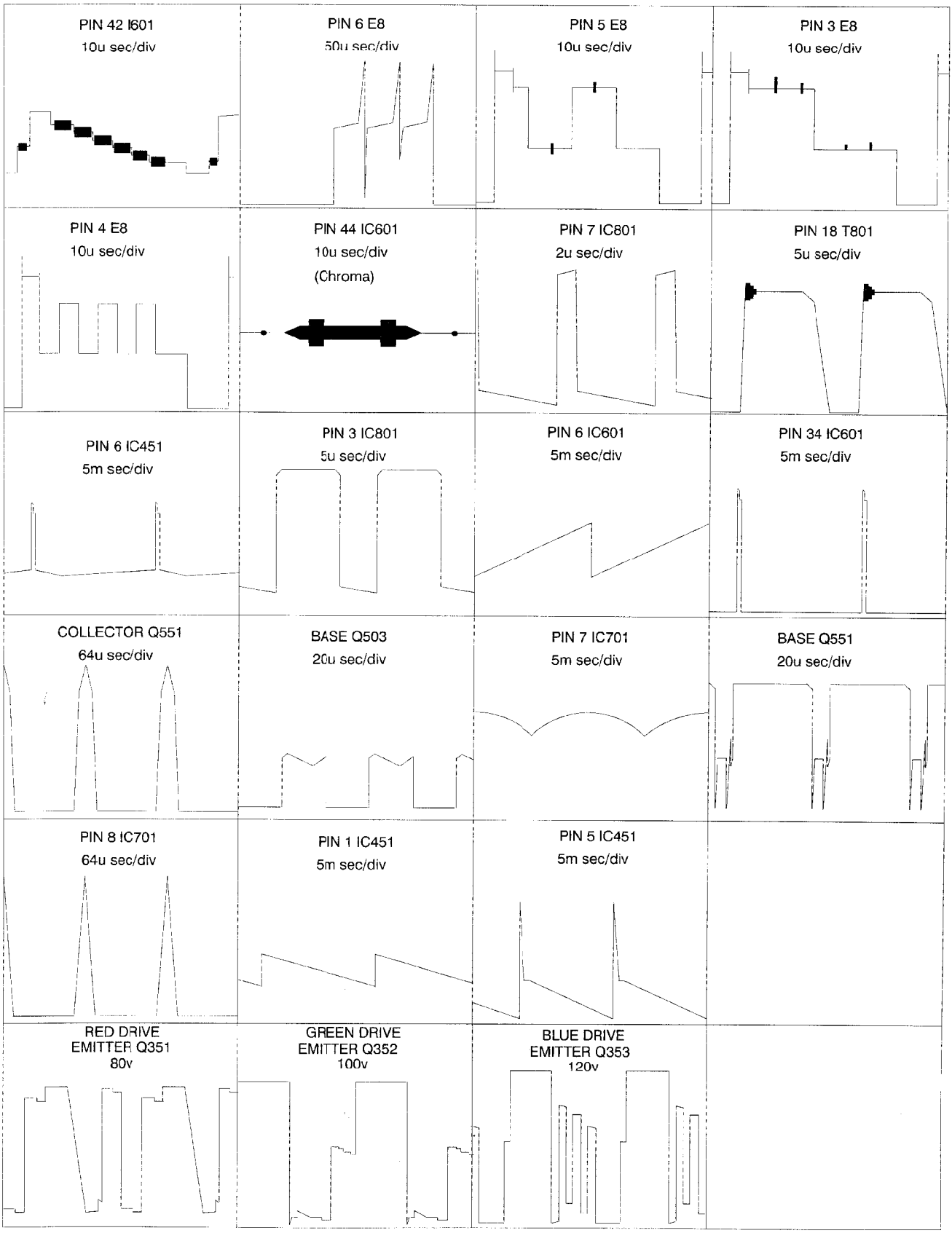
TRANSISTORS		DIODES		TEST POINTS	
Q351	C3	D351	A2	TPY1	B4
Q352	B3	D352	A2	TPY2	B3
Q353	C4	D353	A2	TPY3	B3
Q901	C3	D358	B3	TPY4	C3
Q902	B1	D360	B2	TPY5	C2
Q903	C4	D902	D4	TPY6	B1
Q904	C4	D903	C4		
Q905	C4	D904	D2		
Q906	D4	I.C'S			
Q907	D3	I.C.351	B2		
Q908	E2				
Q909	E3				

B – BOARD TNP117064



TRANSISTORS		DIODES		TEST POINTS	
Q101	D3	D2301	E5	TPB03	E1
Q102	D3	D2302	F5	TPB04	C2
Q103	D1	D2304	B3	TPB05	E2
Q201	E1	D3001	B1	TPB06	E3
Q202	E1	D3002	A1	TPB07	E3
Q2101	D4	D3004	B1	TPB08	D2
Q2102	D4	D3005	F1	TPB09	C2
Q2301	B3	D3006	D3	TPB10	D2
Q2302	C3	D3007	D3	TPB11	D2
Q2305	C4	D3012	E2	TPB12	D2
Q2306	C3	D3013	E2	TPB13	D2
Q2307	B3	D3014	F3	TPB14	D2
Q2308	B2	D3015	F3	TPB15	D3
Q2309	D5	D3016	C2	TPB16	C3
Q2310	D5	D3017	F3	TPB17	D1
Q3001	B2	I.C'S		TPB18	C2
Q3004	C1	I.C.102	D2		
Q3005	C1	I.C.2101	C4		
Q3006	F1	I.C.2301	C5		
Q3011	C3	I.C.3001	A2		
Q3012	E3				
Q3013	E4				

WAVEFORM PATTERN TABLE



SCHEMATIC DIAGRAM FOR MODELS TX-28/25S1DR (EURO-2L CHASSIS)

IMPORTANT SAFETY NOTICE

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Notes

RESISTOR

All resistors are carbon ¼W resistor, unless marked.
Unit of resistance is OHM (Ω) (K=1,000, M=1,000,000).

CAPACITOR

All capacitors are ceramic 50V capacitors, unless marked, the unit of capacitance is μF unless otherwise stated.

COIL

Unit of inductance is μH, unless otherwise stated.

TEST POINT

: Test Point position

EARTH SYMBOL

: Chassis Earth (Cold)

: Line Earth (Hot)

VOLTAGE MEASUREMENT

Voltage is measured by a DC voltmeter.
Measurement conditions are as follows:

Power source	AC 220-240V, 50Hz
Receiving Signal	Colour Bar signal (RF)
All customer controls	Maximum position

: Indicates the Video signal path

: Indicates the Audio signal path

: Indicates the Vertical/Horizontal signal path

This schematic diagram is the latest at the time of printing and is subject to change without notice.

Precautions

a. Do not touch the hot part, or the hot and cold parts at the same time, as you are liable to a shock hazard.

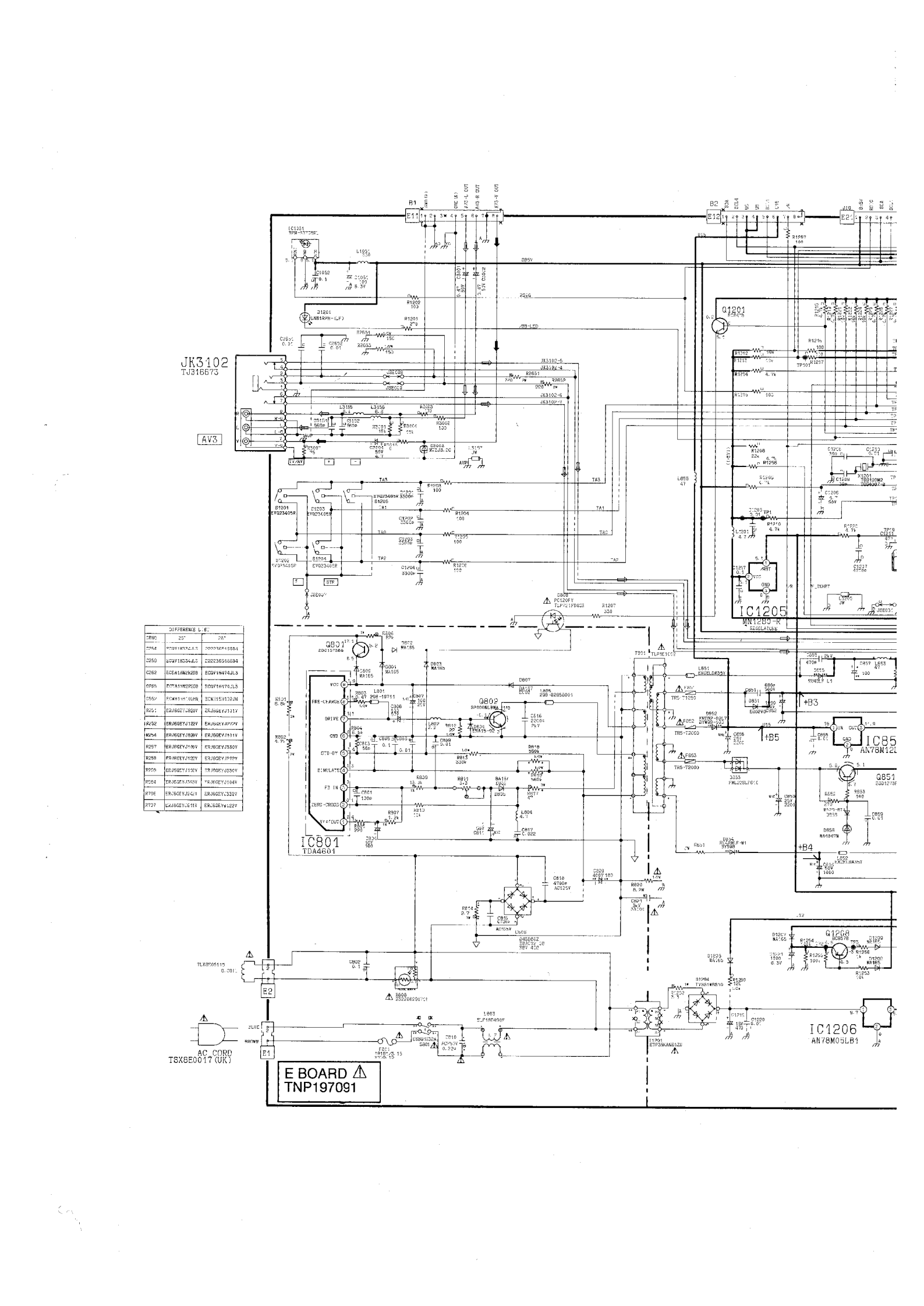
b. Do not short-circuit the hot and cold circuits as electrical components may be damaged.

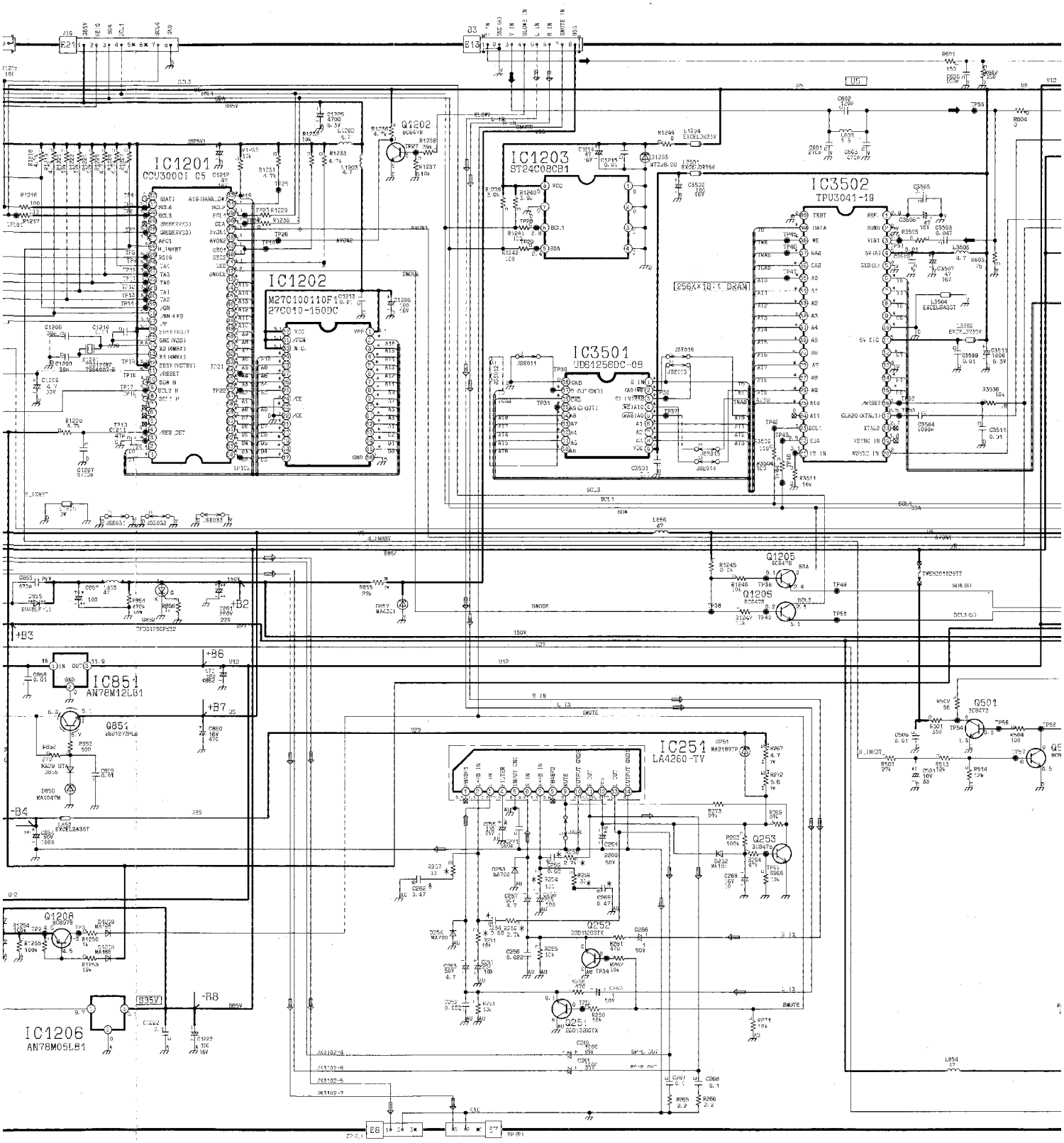
c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously, as this may cause fuse failure. Connect the earth of the instruments to the earth connection of the circuit being measured.

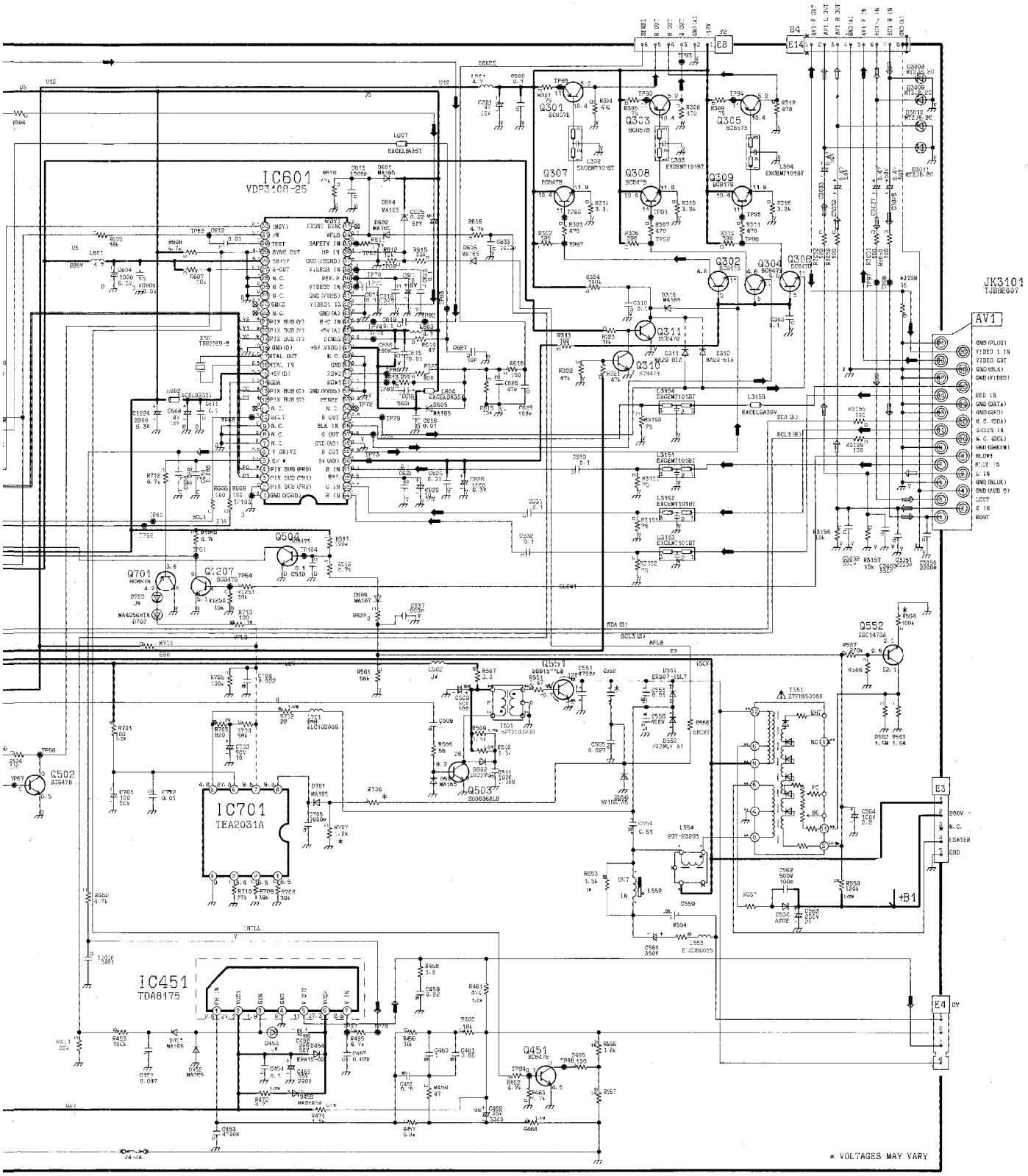
d. Make sure to disconnect the power plug before removing the chassis.

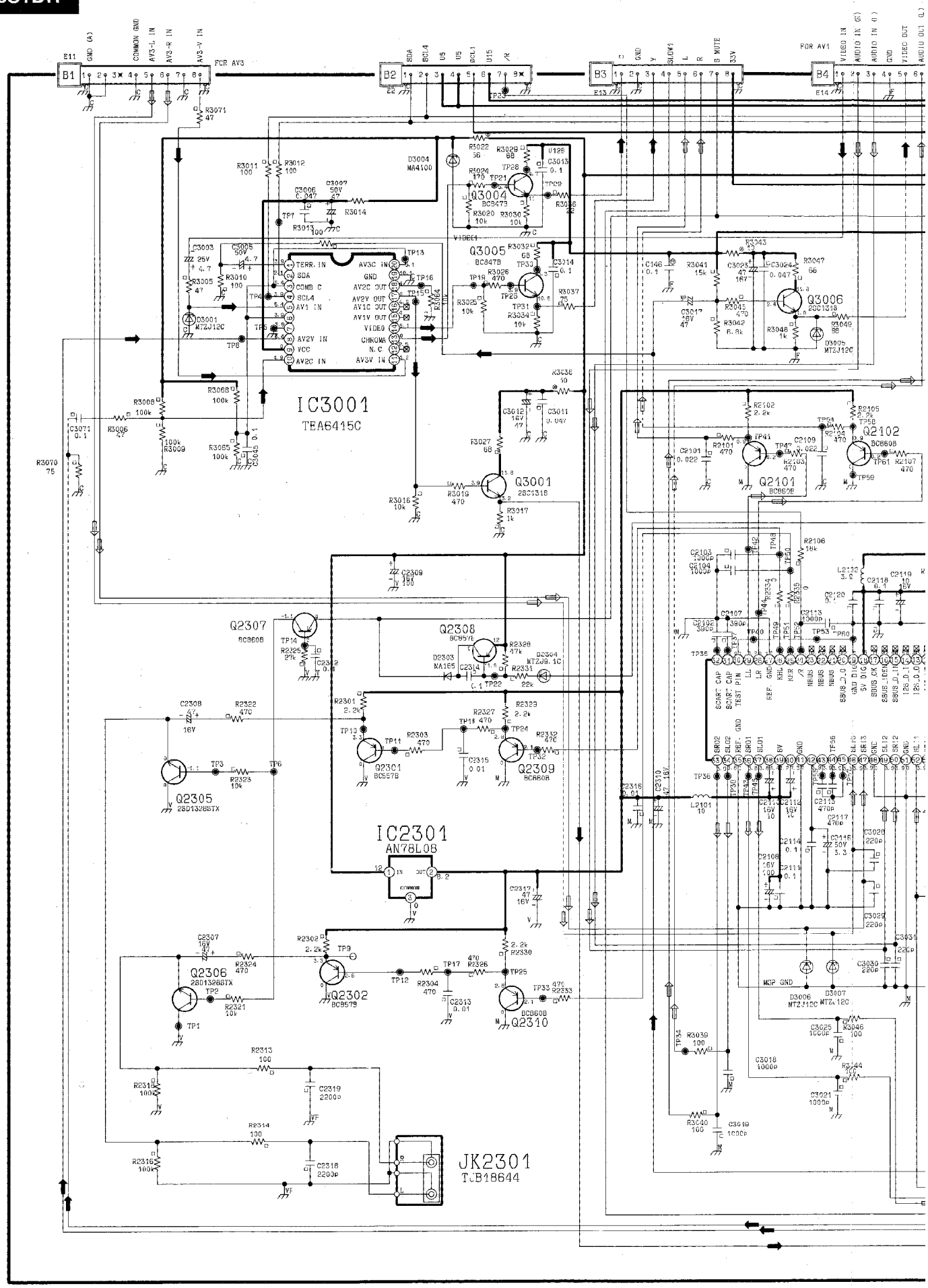
Remarks

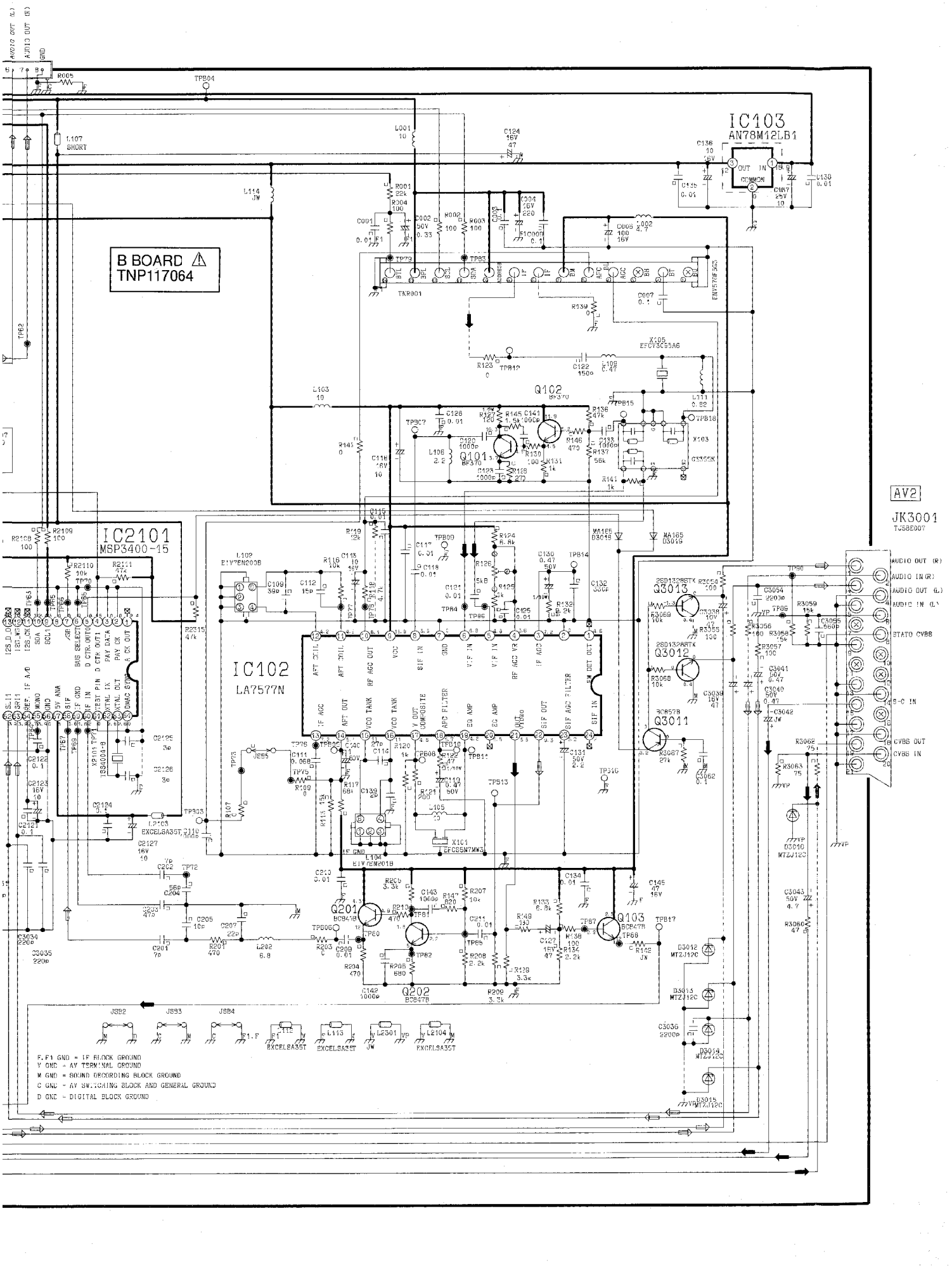
The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection. The circuit is defined by HOT and COLD indications in the schematic diagram. All circuits, except the Power Circuit, are COLD.

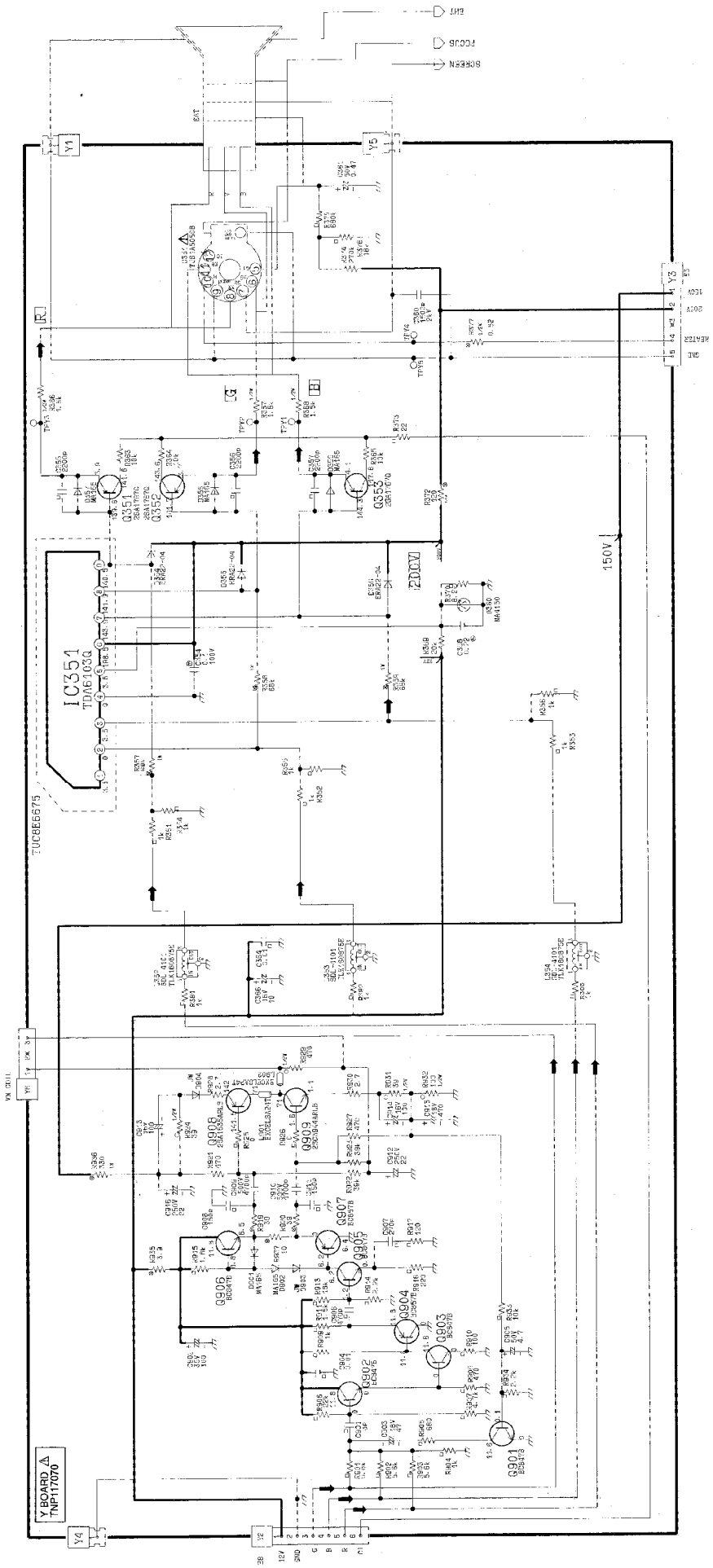

JK3102
TJU16673
AV3
IC1205
MN1280-R
REGULATOR
IC801
TDA4601
IC1206
AN78M05LB1
AC CORD
TSX6E0017 (UK)
E BOARD ⚠
TNP197091
+B3
+B5
+B4
Q801
Q802
Q1201
Q1208
Q851
B1
B2
E1
E2
DIFFERENCE L.S.
25"
29"


IC1201
CCU30001 05
IC1202
M27C100110F1
27C010-150DC
IC1203
ST24C08CB1
IC3501
UD61256DC-09
IC3502
TPU3041-19
IC851
AN78M12LB1
IC1206
AN78M05LB1
IC251
LA4280-TV
Q1202
Q1205
Q1206
Q1208
Q501
Q851
Q252
Q253
Q254
Q255
+B2
+B3
+B6
+B7
-B4
-B8
8.35V
150V
SCL3
SDA3
BMUTE
L IN
R IN
S IN


IC601
VDP3400B-25
IC701
TEA2031A
IC451
TDA8175
JK3101
TJS8E097
AV1
Q501
Q303
Q305
Q307
Q308
Q309
Q302
Q304
Q306
Q311
Q312
Q504
Q701
Q207
Q502
Q552
Q551
Q503
Q451
T551
E3
E4
+B1
* VOLTAGES MAY VARY


IC3001
TEA6415C
IC2301
AN78L08
JK2301
TCB18644
Q3001
2SC1318
Q3003
Q3004
BC847B
Q3005
BC847B
Q3006
2SC1318
Q2101
BC860B
Q2102
BC860B
Q2301
BC557B
Q2302
BC957B
Q2305
2SD1328STX
Q2306
2SD1328STX
Q2307
BC860B
Q2308
BC957B
Q2309
BC860B
Q2310
BC860B
D3001
MTZJ12C
D3004
MA4100
D3005
MTZJ12C
D3006
MTZJ12C
D3007
MTZJ12C
D2303
MA165
D2304
MTZJ8.1C
FOR AV3
FOR AV1
B1
B2
B3
B4

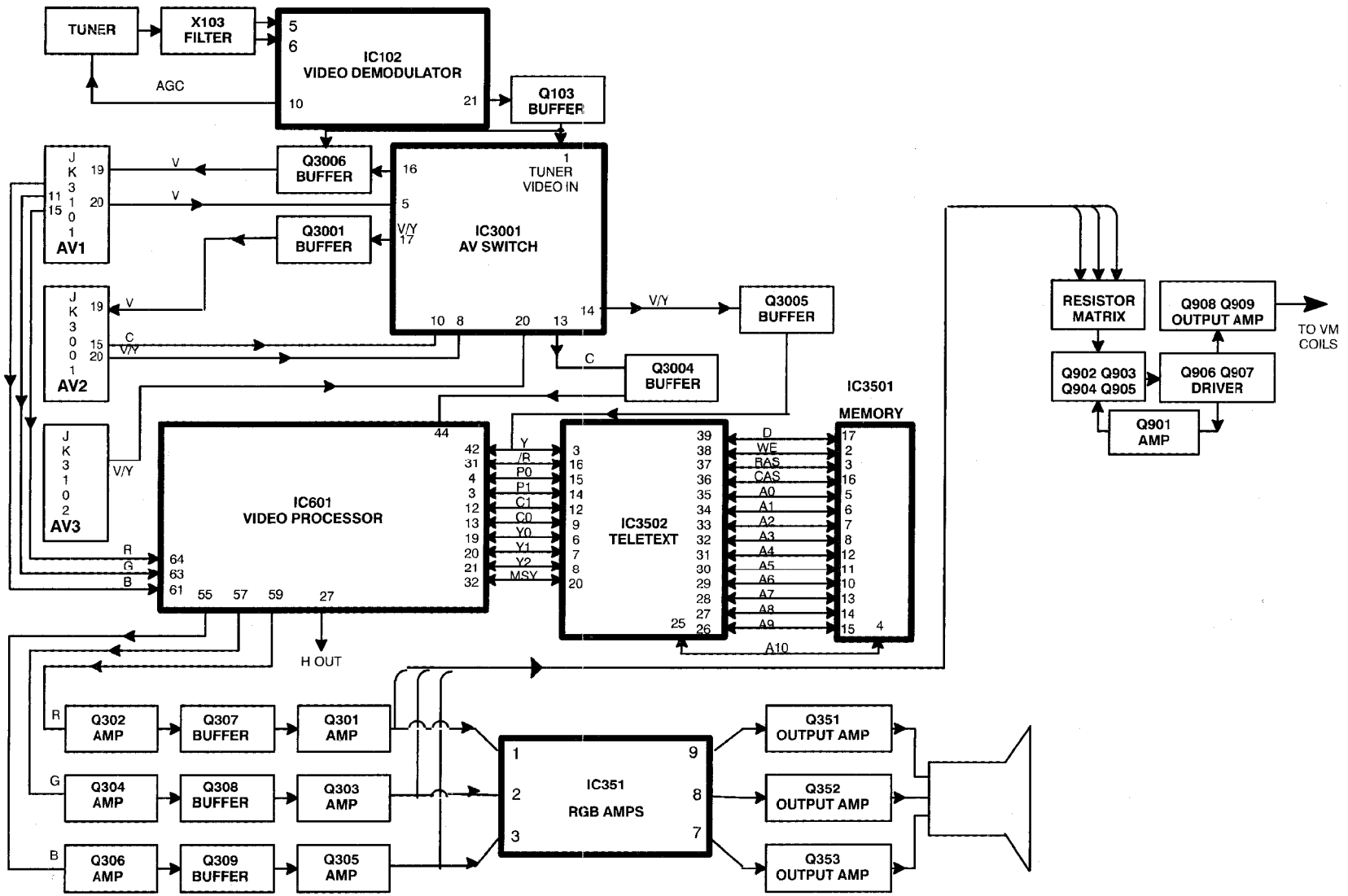

B BOARD ⚠
TNP117064
IC103
AN78M12LB1
IC2101
MSP3400-15
IC102
LA7577N
Q102
Q101
Q201
Q202
Q103
Q3013
Q3012
Q3011
AV2
JK3001
AUDIO OUT (R)
AUDIO IN (R)
AUDIO OUT (L)
AUDIO IN (L)
STATO CVBS
S-C IN
CVBS OUT
CVBS IN
F, F1 GND = IF BLOCK GROUND
V GND = AV TERMINAL GROUND
M GND = SOUND DECORDING BLOCK GROUND
C GND = AV SWITCHING BLOCK AND GENERAL GROUND
D GND = DIGITAL BLOCK GROUND



PARTS COMM

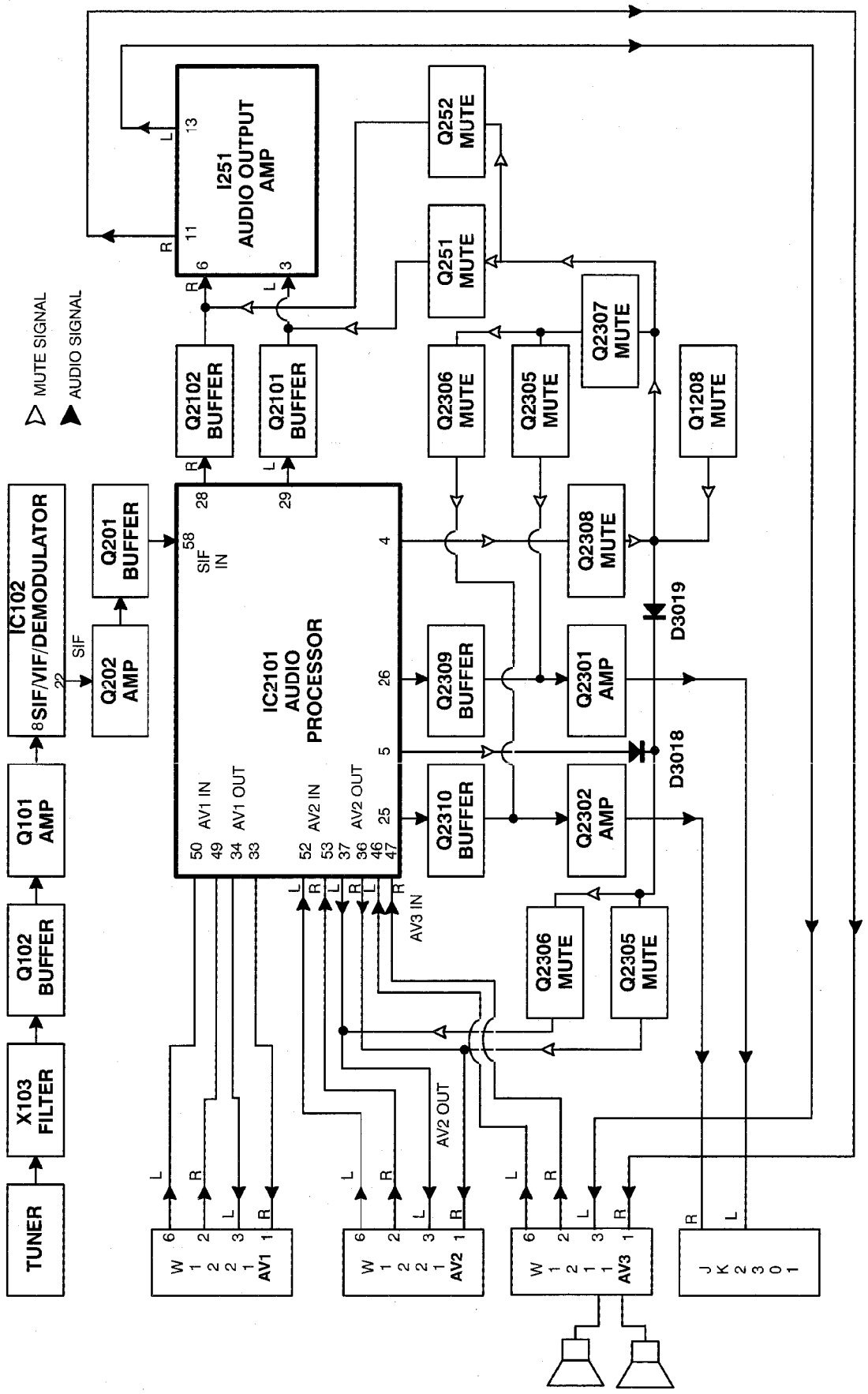
Ref No.	Part No
MISCELLANEC	
1)	EUR51920
2)	*********
3)	*********
4)	THE492–
5)	TNP11707
6)	*********
7)	*********
8)	TNP11706
9)	*********
10)	TSX8E001
11)	TMX8E01(
12)	EASG12D
13)	*********
14)	*********
15)	*********
16)	*********
17)	UR51EC7
	ENV578F5
	TQB8E20
	F9–4–22
	UM–3DE
	TBM8E14
	TEK6935
	SVM100
	TPD8E56
	TES8E01
	TMW8E02
	TES4537
	TES8E01
	TES4537
CAPACITORS	
C001	ECUV1H1
C002	ECEA1HM
C003	ECUV1H1
C004	ECEA1CM
C006	ECEA1CM
C007	ECUV1H1
C009	ECUV1H1
C109	ECUV1H3
C110	ECUV1H1
C111	ECUV1H6
C112	ECUV1H1
C113	ECEA1CM
C114	ECUV1H2
C115	ECUV1H1
C116	ECEA1CM
C117	ECUV1H1
C118	ECUV1H1
C119	ECEA1HM
C120	ECUV1H1
C121	ECUV1H1
C122	ECUV1H1
C123	ECUV1H1
C124	ECEA1CM
C125	ECUV1H1
C127	ECEA1CM
C128	ECUV1H1
C130	ECEA1HM

VIDEO BLOCK DIAGRAM

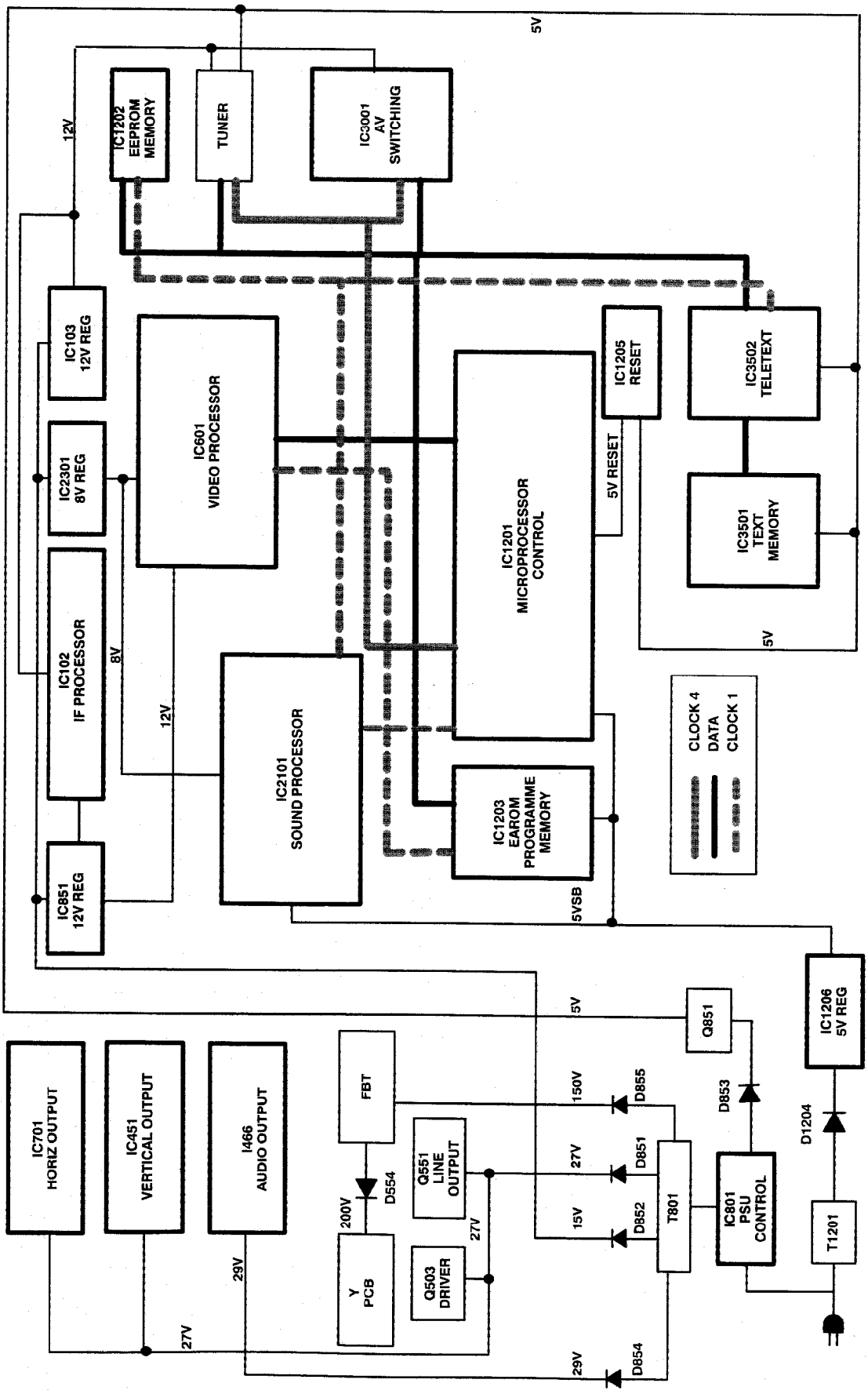


AUDIO BLOCK DIAGRAM

AUDIO BLOCK DIAGRAM



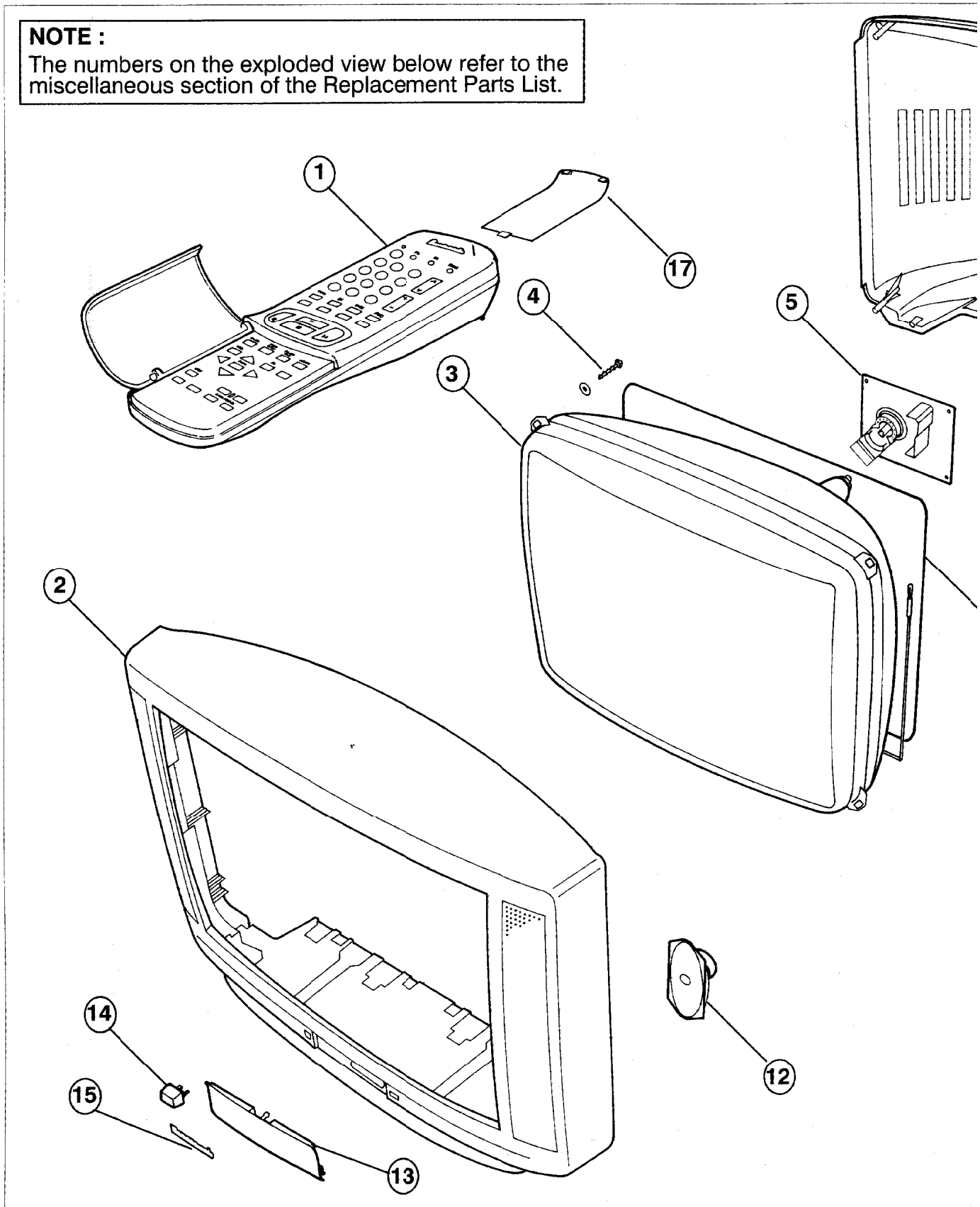
POWER SUPPLY AND CONTROL BLOCK DIAGRAM



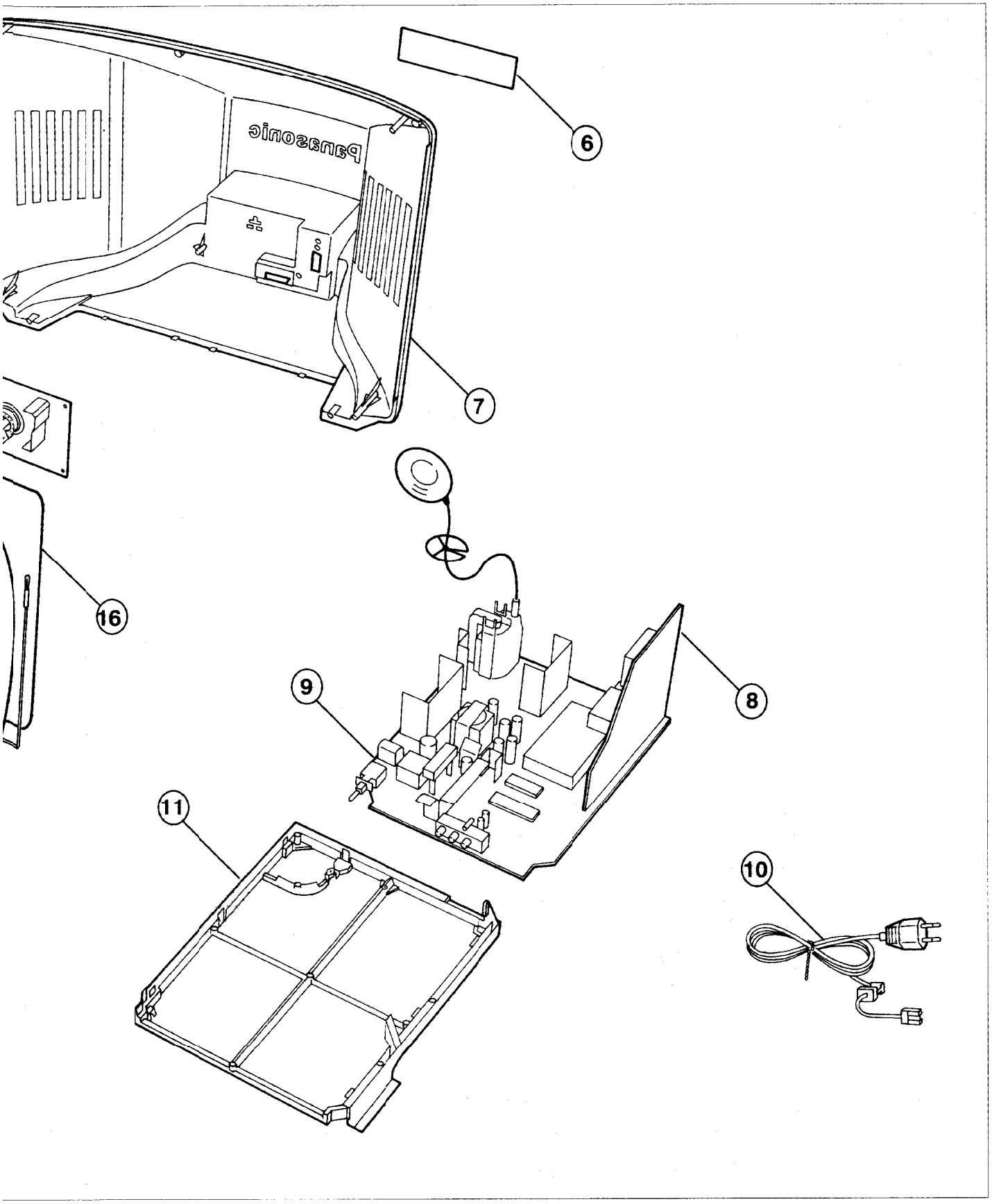
NOTES

PARTS LOCATION F

NOTE :
The numbers on the exploded view below refer to the miscellaneous section of the Replacement Parts List.

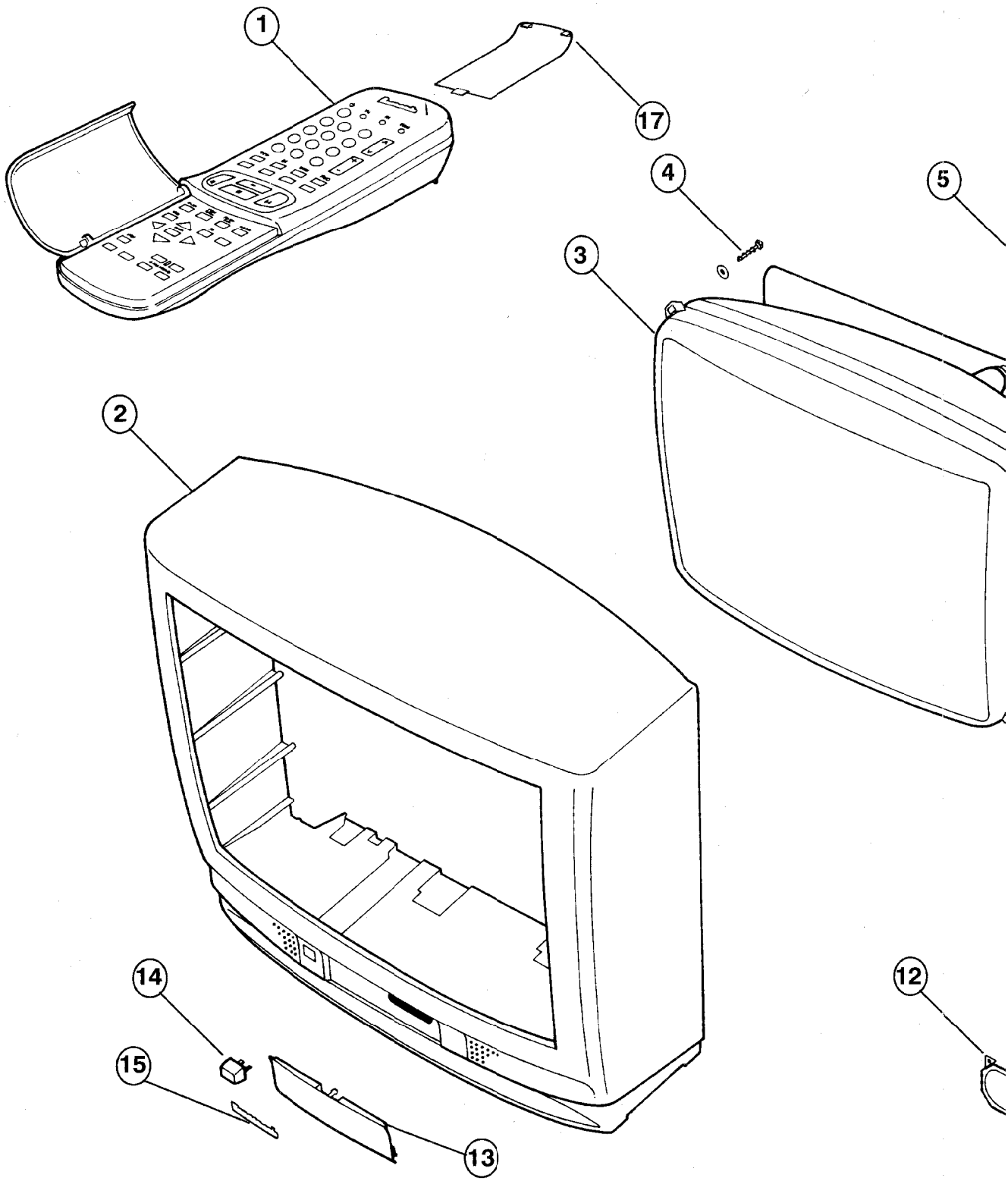


ION FOR TX – 28S1DR

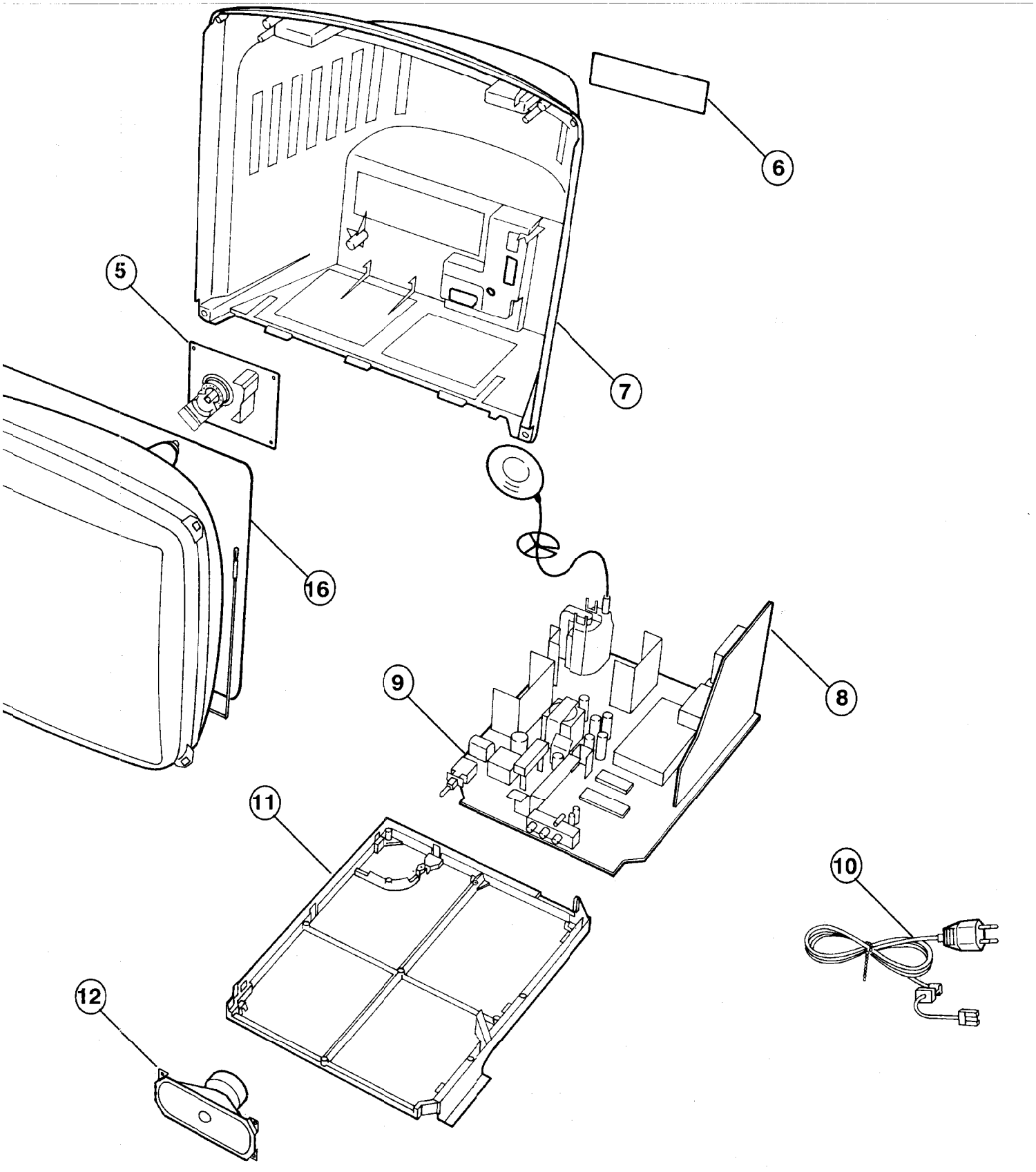


PARTS LOCATION

NOTE :
The numbers on the exploded view below refer to the miscellaneous section of the Replacement Parts List.



LOCATION FOR TX – 25S1DR



REPLACEMENT PARTS LIST

Important Safety Notice
Components identified by⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

PARTS COMMON TO TX – 28S1DR AND TX – 25S1DR

Ref No.	Part No.	Description	
MISCELLANEOUS COMPONENTS			
1)	EUR51920	REMOTE CONTROL	
2)	*********	SEE DIFFERENCE LIST	
3)	*********	SEE DIFFERENCE LIST	
4)	THE492–4	CRT FIXING SCREW	
5)	TNP117070AA	Y P.C.B.	⚠
6)	*********	SEE DIFFERENCE LIST	
7)	*********	SEE DIFFERENCE LIST	
8)	TNP117064AD	B P.C.B.	⚠
9)	*********	SEE DIFFERENCE LIST	
10)	TSX8E0011	MAINS LEAD	⚠
11)	TMX8E010	CHASSIS FRAME	
12)	EASG12D531F2	SPEAKER	
13)	*********	SEE DIFFERENCE LIST	
14)	*********	SEE DIFFERENCE LIST	
15)	*********	SEE DIFFERENCE LIST	
16)	*********	SEE DIFFERENCE LIST	
17)	UR51EC780	BATTERY COVER (REMOTE)	
	ENV578F5G3	TUNER	⚠
	TQB8E2024	INST BOOK	⚠
	F9–4–220	RELAY	
	UM–3DEP–2P	BATTERY	
	TBM8E1451–1	PRESET LABEL	
	TEK6935	LID SWITCH	
	SVM100	COIL	
	TPD8E562	CUSHION	
	TES8E012	EARTH SPRING	
	TMW8E020	LED HOLDER	
	TES4537	SPRING	
	TES8E011	CHASSIS SPRING	
	TES4537	SPRING	

CAPACITORS

C001	ECUV1H103ZFX	S.M.CAP	50V	10nF
C002	ECEA1HMR33GB	ELECT	50V	0.33μF
C003	ECUV1H104ZFX	S.M.CAP	50V	100nF
C004	ECEA1CM221GB	ELECT	16V	220pF
C006	ECEA1CM101GB	ELECT	16V	100pF
C007	ECUV1H104ZFX	S.M.CAP	50V	100nF
C009	ECUV1H104ZFX	S.M.CAP	50V	100nF
C109	ECUV1H390JPX	S.M.CAP	50V	39pF
C110	ECUV1H102KBX	S.M.CAP	50V	1nF
C111	ECUV1H683ZFX	S.M.CAP	50V	68nF
C112	ECUV1H150JCX	S.M.CAP	50V	15pF
C113	ECEA1CM100GB	ELECT	16V	10pF
C114	ECUV1H270JPX	S.M.CAP	50V	27pF
C115	ECUV1H103ZFX	S.M.CAP	50V	10nF
C116	ECEA1CM100GB	ELECT	16V	10pF
C117	ECUV1H103ZFX	S.M.CAP	50V	10nF
C118	ECUV1H103ZFX	S.M.CAP	50V	10nF
C119	ECEA1HMR47GB	ELECT	50V	0.47μF
C120	ECUV1H102KBX	S.M.CAP	50V	1nF
C121	ECUV1H103ZFX	S.M.CAP	50V	10nF
C122	ECUV1H151JX	S.M.CAP	50V	150pF
C123	ECUV1H102KBX	S.M.CAP	50V	1nF
C124	ECEA1CM470GB	ELECT	16V	47μF
C125	ECUV1H103ZFX	S.M.CAP	50V	10nF
C127	ECEA1CM470GB	ELECT	16V	47μF
C128	ECUV1H103ZFX	S.M.CAP	50V	10nF
C130	ECEA1HMR47GB	ELECT	50V	0.47μF
C131	ECEA1HM2R2GB	ELECT	50V	2.2μF
C132	ECUV1H331KBX	S.M.CAP	50V	330pF
C133	ECUV1H102KBX	S.M.CAP	50V	1nF
C134	ECUV1H103ZFX	S.M.CAP	50V	10nF
C135	ECUV1H103ZFX	S.M.CAP	50V	10nF
C136	ECEA1CM100GB	ELECT	16V	10pF
C137	ECEA1EM100GB	ELECT	25V	0.1μF
C138	ECUV1H103ZFX	S.M.CAP	50V	10nF
C139	ECUV1H020CCX	S.M.CAP	50V	2pF
C140	ECEA1HM010GB	ELECT	50V	1pF
C141	ECUV1H102KBX	S.M.CAP	50V	1nF
C142	ECUV1H102KBX	S.M.CAP	50V	1nF
C143	ECUV1H102KBX	S.M.CAP	50V	1nF
C145	ECEA1CM470GB	ELECT	16V	47μF
C201	ECUV1H070DCX	S.M.CAP	50V	7pF
C202	ECUV1H070DCX	S.M.CAP	50V	7pF
C203	ECUV1H470JX	S.M.CAP	50V	47pF
C204	ECUV1H560JCX	S.M.CAP	50V	56pF
C205	ECUV1H100DCX	S.M.CAP	50V	10pF
C207	ECUV1H220JCX	S.M.CAP	50V	22pF
C209	ECUV1H103ZFX	S.M.CAP	50V	10nF
C210	ECUV1H103ZFX	S.M.CAP	50V	10nF
C211	ECUV1H103ZFX	S.M.CAP	50V	10nF
C251	ECEA1EU101	ELECT	25V	100μF
C252	ECUV1H223KBX	S.M.CAP	50V	22nF
C253	ECEA1HU4R7	ELECT	50V	4.7μF
C255	ECEA1EGE101	ELECT	25V	100μF
C256	ECUV1H223KBX	S.M.CAP	50V	22nF
C257	ECEA1HU4R7	ELECT	50V	4.7μF
C258	ECEA1EU101	ELECT	25V	100μF
C260	ECEA1VU102	ELECT	35V	1000μF
C261	ECEA1VU102	ELECT	35V	1000μF
C263	ECEA1HU010	ELECT	50V	1μF
C264	ECEA1HGE222	ELECT	50V	2200μF
C266	ECEA1HU010	ELECT	50V	1μF
C267	ECUV1H104ZFX	S.M.CAP	50V	100nF
C268	ECUV1H104ZFX	S.M.CAP	50V	100nF
C269	ECEA1CU100	ELECT	16V	10μF
C271	ECUV1H561KBX	S.M.CAP	50V	560pF
C301	ECEA1CU470	ELECT	16V	47μF
C302	ECUV1H104ZFX	S.M.CAP	50V	100nF
C303	ECUV1H104ZFX	S.M.CAP	50V	100nF
C310	ECUV1H104ZFX	S.M.CAP	50V	100nF
C354	ECQM2104KZ	FILM	250V	100nF
C355	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C356	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C357	ECUV1H222JCX	S.M.CAP	50V	2.2nF
C358	ECQM1H224J	FILM	50V	220nF
C360	ECKC3D152J	CERAMIC	2KV	1.5nF ⚠
C361	ECEA1HMR47GB	ELECT	50V	0.47μF
C364	ECUV1H103ZFX	S.M.CAP	50V	10nF
C366	ECEA1CM100GB	ELECT	16V	10pF
C451	ECUV1H102JX	S.M.CAP	50V	1nF
C452	ECUV1H473ZFX	S.M.CAP	50V	47nF
C453	ECUV1H472KBX	S.M.CAP	50V	4.7nF
C454	ECUV1H104ZFX	S.M.CAP	50V	100nF
C455	ECEA1VGE222	ELECT	35V	2200μF
C456	ECEA1HGE221	ELECT	50V	220μF
C457	ECUV1H223KBX	S.M.CAP	50V	22nF
C458	ECQM1H154J	FILM	50V	150nF
C459	ECQM1H224J	FILM	50V	220nF
C460	ECQV1H105JZ	FILM	50V	1μF

Ref No.	Part No.	Description			
C461	ECQM1H684J	FILM	50V	680nF	
C462	ECEA1VGE332	ELECT	35V	3300μF	
C501	ECEA1AU330	ELECT	10V	33μF	
C506	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C508	ECQV1H105JZ	FILM	50V	1μF	
C509	ECEA1HGE101	ELECT	50V	100μF	
C510	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C511	ECQM2683JZ	FILM	250V	68nF	
C551	ECWH15H472J	FILM	1500V	4700μF	
C554	ECWF2H514J	FILM	500V	510nF	⚠
C555	ECWH12H103J	FILM	1250V	10nF	⚠
C556	ECQM4333JC	FILM	400V	33nF	
C559	ECWF2H684J	FILM	500V	680nF	⚠
C560	ECEA2GGE2R2	ELECT	400V	2.2μF	
C562	ECKC2H101J	CERAMIC	500V	100pF	⚠
C563	ECEA2EU220	ELECT	250V	22μF	
C564	ECEA2AU2R2	ELECT	100V	2.2μF	
C565	ECQP1H273J	FILM	100V	2700μF	
C601	ECUV1H271JCX	S.M.CAP	50V	270pF	
C602	ECUV1H121JCX	S.M.CAP	50V	120pF	
C603	ECUV1H471JCX	S.M.CAP	50V	470pF	
C604	ECEA0JU102	ELECT	6.3V	1000μF	
C605	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C608	ECUV1H683ZFX	S.M.CAP	50V	68nF	
C609	ECEA1CU470	ELECT	16V	47μF	
C610	ECUV1H683ZFX	S.M.CAP	50V	68nF	
C611	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C612	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C613	ECUV1H102JCX	S.M.CAP	50V	1nF	
C614	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C615	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C616	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C618	ECUV1H473ZFX	S.M.CAP	50V	47nF	
C619	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C620	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C621	ECEA1CU100	ELECT	16V	10μF	
C622	ECEA1CU100	ELECT	16V	10μF	
C623	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C624	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C625	ECEA1HNR22	ELECT	50V	0.22μF	
C626	ECEA0JU102	ELECT	6.3V	1000μF	
C627	ECUV1H100DCX	S.M.CAP	50V	10pF	
C628	ECUV1H470JCX	S.M.CAP	50V	47pF	
C629	ECUV1H101JCX	S.M.CAP	50V	100pF	
C630	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C631	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C632	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C633	ECUV1H102JCX	S.M.CAP	50V	1nF	
C636	ECUV1H101JCX	S.M.CAP	50V	100pF	
C637	ECUV1H102KBX	S.M.CAP	50V	1nF	
C638	ECUV1H181JCX	S.M.CAP	50V	180pF	
C639	ECUV1H561KBX	S.M.CAP	50V	560pF	
C701	ECEA1HGE101	ELECT	50V	100μF	
C702	ECUV1H103KBX	S.M.CAP	50V	10nF	
C703	ECEA1HGE100	ELECT	50V	10μF	
C704	ECQB1H223K	FILM	50V	22nF	
C705	ECQB1H102J	FILM	50V	1nF	
C801	ECUV1H101JCX	S.M.CAP	50V	100pF	
C802	ECQE6104K	FILM	600V	100nF	⚠
C803	ECUV1H560JX	S.M.CAP	50V	56pF	
C804	ECEA1CU101	ELECT	16V	100μF	
C805	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C806	ECEA1HU101	ELECT	50V	100μF	
C807	ECEA1EGE101	ELECT	25V	100μF	
C808	ECQB1H103J	FILM	50V	10nF	
C809	ECQB1H103J	FILM	50V	10nF	
C810	ECQU2A224MN	FILM	250V	220nF	
C811	ECEA1HN010	ELECT	50V	1μF	
C815	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C816	ECKC3D222JB	CERAMIC	2KV	2200pF	⚠

Ref No.	Part No.	Description			
C817	ECQB1H223K	FILM	50V	22nF	
C818	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C820	ECOS2GG181NG	ELECT	400V	180μF	⚠
C821	ECKCNS332J	CERAMIC	1.2KV	3.3nF	⚠
C851	ECKC2H681J	CERAMIC	500V	680pF	⚠
C852	ECEA1HU102	ELECT	50V	1000μF	
C853	ECEA1EGE222	ELECT	25V	2200μF	
C854	ECEA1HGE102	ELECT	50V	1000μF	
C855	ECKC3D471JB	CERAMIC	2KV	470pF	⚠
C856	ECEA1EGE222	ELECT	25V	2200μF	
C857	ECEA2EU101	ELECT	250V	100μF	
C858	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C859	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C860	ECEA1CU471	ELECT	16V	470μF	
C861	ECOS2EA221AB	ELECT	400V	220μF	
C862	ECEA1CU471	ELECT	16V	470μF	
C901	ECUV1H030CCX	S.M.CAP	50V	30pF	
C902	ECEA1VU101	ELECT	35V	100μF	
C903	ECEA1CM470GB	ELECT	16V	47μF	
C904	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C905	ECEA1HM4R7GB	ELECT	50V	4.7μF	
C906	ECUV1H471KBX	S.M.CAP	50V	470pF	
C907	ECUV1H271JCX	S.M.CAP	50V	270pF	
C908	ECUV1H151JCX	S.M.CAP	50V	150pF	
C909	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C910	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C911	ECUV1H151JCX	S.M.CAP	50V	150pF	
C912	ECEA2CU100	ELECT	160V	10μF	
C913	ECEA1CM101GB	ELECT	16V	100pF	
C914	ECEA1CM101GB	ELECT	16V	100pF	
C915	ECEA1CM471GB	ELECT	16V	470pF	
C916	ECEA2CU100	ELECT	160V	10μF	
C1051	ECEA0JU101	ELECT	6.3V	100μF	
C1052	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1201	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1202	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1203	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1204	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1205	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1206	ECEA1HU4R7	ELECT	50V	4.7μF	
C1207	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C1208	ECUV1H390JCX	S.M.CAP	50V	39pF	
C1209	ECUV1H390JCX	S.M.CAP	50V	39pF	
C1210	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1211	ECUV1H470JCX	S.M.CAP	50V	47pF	
C1212	ECEA1CU470	ELECT	16V	47μF	
C1213	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1214	ECEA1CU470	ELECT	16V	47μF	
C1215	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1217	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1219	ECEA1CU471	ELECT	16V	470μF	
C1220	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1221	ECEA0JU102	ELECT	6.3V	1000μF	
C1222	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1223	ECEA1CU101	ELECT	16V	100μF	
C1224	ECEA0JU222	ELECT	6.3V	2200μF	
C1225	ECEA0JM472GE	ELECT	6.3V	4.7nF	
C1226	ECEA1CU101	ELECT	16V	100μF	
C2101	ECUV1H223KBX	S.M.CAP	50V	22nF	
C2102	ECUV1H391KBX	S.M.CAP	50V	390pF	
C2103	ECUV1H102KBX	S.M.CAP	50V	1nF	
C2104	ECUV1H102KBX	S.M.CAP	50V	1nF	
C2107	ECUV1H391KBX	S.M.CAP	50V	390pF	
C2108	ECEA1CM101GB	ELECT	16V	100pF	
C2109	ECUV1H223KBX	S.M.CAP	50V	22nF	
C2110	ECEA1CM100GB	ELECT	16V	10pF	
C2111	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C2112	ECEA1CM100GB	ELECT	16V	10pF	
C2113	ECUV1H102KBX	S.M.CAP	50V	1nF	
C2114	ECUV1H104ZFX	S.M.CAP	50V	100nF	

Ref No.	Part No.		Description	
C2115	ECUV1H471KBX	S.M.CAP	50V	470pF
C2116	ECEA1HM3R3GB	ELECT	50V	3.3μF
C2117	ECUV1H471KBX	S.M.CAP	50V	470pF
C2118	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2119	ECEA1CM100GB	ELECT	16V	10pF
C2120	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2121	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2122	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2123	ECEA1CM100GB	ELECT	16V	10pF
C2124	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2125	ECUV1H030CCX	S.M.CAP	50V	30pF
C2126	ECUV1H030CCX	S.M.CAP	50V	30pF
C2127	ECEA1CM100GB	ELECT	16V	10pF
C2307	ECEA1CM470GB	ELECT	16V	47μF
C2308	ECEA1CM470GB	ELECT	16V	47μF
C2309	ECEA1CM101GB	ELECT	16V	100pF
C2310	ECEA1CM470GB	ELECT	16V	47μF
C2312	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2313	ECUV1H103KBX	S.M.CAP	50V	10nF
C2314	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2315	ECUV1H103KBX	S.M.CAP	50V	10nF
C2316	ECUV1H103ZFX	S.M.CAP	50V	10nF
C2317	ECEA1CM470GB	ELECT	16V	47μF
C2318	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C2319	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C2651	ECUV1H103KBX	S.M.CAP	50V	10nF
C2652	ECUV1H103KBX	S.M.CAP	50V	10nF
C3001	ECEA1HUR47	ELECT	50V	0.47μF
C3002	ECEA1HUR47	ELECT	50V	0.47μF
C3003	ECEA1EM4R7GB	ELECT	25V	4.7μF
C3004	ECEA1HU4R7	ELECT	50V	4.7μF
C3005	ECEA1HM4R7GB	ELECT	50V	4.7μF
C3006	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3007	ECEA1HM470GB	ELECT	50V	47μF
C3011	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3012	ECEA1CM470GB	ELECT	16V	47μF
C3013	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3014	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3017	ECEA1CN470	ELECT	16V	47μF
C3018	ECUV1H102KBX	S.M.CAP	50V	1nF
C3019	ECUV1H102KBX	S.M.CAP	50V	1nF
C3021	ECUV1H102KBX	S.M.CAP	50V	1nF
C3023	ECEA1CM470GB	ELECT	16V	47μF
C3024	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3025	ECUV1H102KBX	S.M.CAP	50V	1nF
C3026	ECEA1HUR47	ELECT	50V	0.47μF
C3027	ECEA1HUR47	ELECT	50V	0.47μF
C3028	ECUV1H221JX	S.M.CAP	50V	220pF
C3029	ECUV1H221JX	S.M.CAP	50V	220pF
C3030	ECUV1H221JX	S.M.CAP	50V	220pF
C3031	ECUV1H221JX	S.M.CAP	50V	220pF
C3032	ECEA1HUR47	ELECT	50V	0.47μF
C3033	ECEA1HUR47	ELECT	50V	0.47μF
C3034	ECUV1H221JX	S.M.CAP	50V	220pF
C3035	ECUV1H221JX	S.M.CAP	50V	220pF
C3036	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3037	ECUV1H561JCX	S.M.CAP	50V	560pF
C3038	ECEA1CM470GB	ELECT	16V	47μF
C3039	ECEA1CM470GB	ELECT	16V	47μF
C3040	ECEA1HMR47GB	ELECT	50V	0.47μF
C3041	ECEA1HMR47GB	ELECT	50V	0.47μF
C3043	ECEA1HM4R7GB	ELECT	50V	4.7μF
C3045	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3050	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3051	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3052	ECUV1H561JCX	S.M.CAP	50V	560pF
C3053	ECUV1H561JCX	S.M.CAP	50V	560pF
C3054	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3055	ECUV1H561JCX	S.M.CAP	50V	560pF
C3056	ECCR1H101J	CERAMIC	50V	100pF
C3062	ECUV1H104ZFX	S.M.CAP	50V	100nF

Ref No.	Part No.		Description	
C3071	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3151	ECUV1H561JCX	S.M.CAP	50V	560pF
C3152	ECUV1H561JCX	S.M.CAP	50V	560pF
C3501	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3502	ECEA1CU101	ELECT	16V	100μF
C3503	ECUV1H103ZFX	S.M.CAP	50V	10nF
C3504	ECUV1H102JCX	S.M.CAP	50V	1nF
C3505	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3506	ECEA1CU470	ELECT	16V	47μF
C3507	ECEA1CU470	ELECT	16V	47μF
C3508	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3509	ECUV1H103ZFX	S.M.CAP	50V	10nF
C3510	ECEA0JU102	ELECT	6.3V	1000μF
C3511	ECUV1H103ZFX	S.M.CAP	50V	10nF

DIODES

D251	MA2180TP	DIODE
D252	MA165TA5	DIODE
D253	MA700TA5	DIODE
D254	MA700TA5	DIODE
D310	MA165TA5	DIODE
D311	MA29TA5	DIODE
D312	MA29TA5	DIODE
D354	ERA22-04V1	DIODE
D355	ERA22-04V1	DIODE
D356	ERA22-04V1	DIODE
D357	MA165TA5	DIODE
D358	MA165TA5	DIODE
D359	MA165TA5	DIODE
D360	MA4150	DIODE
D451	MA165TA5	DIODE
D452	MA165TA5	DIODE
D454	ERA15-02V3	DIODE
D456	MA2160BLFS	DIODE
D501	MA165TA5	DIODE
D502	EU02	DIODE
D551	ERD07-15L7	DIODE
D552	TVSRU2AM	DIODE
D554	AU02V0	DIODE
D556	MA166TA5	DIODE
D601	MA165TA5	DIODE
D602	MA165TA5	DIODE
D604	MA165TA5	DIODE
D605	MA165TA5	DIODE
D606	MA165TA5	DIODE
D609	MA167TA5	DIODE
D701	MA165TA5	DIODE
D702	MA4056	DIODE
D801	MA165TA5	DIODE
D802	MA165TA5	DIODE
D803	MA165TA5	DIODE
D804	ERA15-02V3	DIODE
D805	EU02	DIODE
D806	RBV4-08	DIODE
D807	EU02	DIODE
D808	PC120FY	DIODE
D809	MA165TA5	DIODE
D851	EU02	DIODE
D852	ERD32-02L7	DIODE
D853	FML22SLF610	DIODE
D854	RU4AMLF-M1	DIODE
D855	RU4BLF-L1	DIODE
D856	MA4047	DIODE
D857	MA4300	DIODE
D858	MA29TA5	DIODE
D901	MA165TA5	DIODE
D902	MA165TA5	DIODE
D1201	LN81RPHL	DIODE
D1203	MA4082	DIODE
D1204	TVSS1WBS10	DIODE
D1205	MA165TA5	DIODE

Ref No.	Part No.	Description
D1207	MA165TA5	DIODE
D1208	MA165TA5	DIODE
D1209	MA165TA5	DIODE
D2303	MA165TA5	DIODE
D2304	MA4091	DIODE
D3001	MA4120	DIODE
D3003	MA4082	DIODE
D3004	MA4100	DIODE
D3005	MA4120	DIODE
D3006	MA4120	DIODE
D3007	MA4120	DIODE
D3008	MA4082	DIODE
D3009	MA4082	DIODE
D3010	MA4082	DIODE
D3011	MA4082	DIODE
D3012	MA4120	DIODE
D3013	MA4120	DIODE
D3014	MA4120	DIODE
D3015	MA4120	DIODE
D3016	MA4120	DIODE
D3018	MA165TA5	DIODE
D3019	MA165TA5	DIODE
D3501	MA165TA5	DIODE

FUSES

F801	19181-3.15	FUSE	⚠
F851	TR5-T1250	FUSE	⚠
F852	TR5-T2000	FUSE	⚠
F853	TR5-T2000	FUSE	⚠
F8011	EYF52BC	FUSE HOLDER	
F8012	EYF52BC	FUSE HOLDER	

SOCKETS

H1202	832AG11D-ESL	I.C.SOCKET

INTEGRATED CIRCUITS

IC102	LA7577N	V.I.F.
IC103	L78M12MRB	12V REGULATOR
IC251	LA4280-TV	AUDIO OUTPUT
IC351	TDA6103Q	R.G.B.AMPLIFIER
IC451	TDA8175-3	VERTICAL OUTPUT
IC601	VDP3108-25	VIDEO PROCESSOR
IC701	TEA2031A	HORIZONTAL OUTPUT
IC801	TDA4601	POWER SUPPLY
IC851	L78M12MRB	12V REGULATOR
IC1051	RPM-637CBRL	LED RECEIVER
IC1201	CCU3000I-05	CENTRAL CONTROL UNIT
IC1202	27C010-09ADR	EPROM
IC1205	MN1280R	RESET
IC1206	L78M05MRB	5V REGULATOR
IC2101	MSP3400	AUDIO PROCESSOR
IC2301	AN78L08TA	8V REGULATOR
IC3001	TEA6415C	VIDEO SWITCH
IC3501	UD61256DC-08	DYNAMIC RAM
IC3502	TPU3041-19	TEXT PROCESSOR

TERMINALS AND LINKS

JA.1	ERJ8GEY0R00	WIRE LINK
JA.10	ERJ6GEY0R00	WIRE LINK
JA.11	ERJ8GEY0R00	WIRE LINK
JA.12	ERJ8GEY0R00	WIRE LINK
JA.13	ERJ6GEY0R00	WIRE LINK
JA.14	ERJ8GEY0R00	WIRE LINK
JA.15	ERJ8GEY0R00	WIRE LINK
JA.16	ERJ8GEY0R00	WIRE LINK
JA.17	ERJ8GEY0R00	WIRE LINK
JA.18	ERJ6GEY0R00	WIRE LINK
JA.19	ERJ6GEY0R00	WIRE LINK
JA.2	ERJ6GEY0R00	WIRE LINK
JA.2	ERJ8GEY0R00	WIRE LINK
JA.20	ERJ6GEY0R00	WIRE LINK

Ref No.	Part No.	Description
JA.21	ERJ6GEY0R00	WIRE LINK
JA.22	ERJ8GEY0R00	WIRE LINK
JA.24	ERJ6GEY0R00	WIRE LINK
JA.25	ERJ8GEY0R00	WIRE LINK
JA.26	ERJ6GEY0R00	WIRE LINK
JA.27	ERJ6GEY0R00	WIRE LINK
JA.28	ERJ6GEY0R00	WIRE LINK
JA.29	ERJ6GEY0R00	WIRE LINK
JA.3	ERJ8GEY0R00	WIRE LINK
JA.30	ERJ6GEY0R00	WIRE LINK
JA.34	ERJ6GEY0R00	WIRE LINK
JA.35	ERJ6GEY0R00	WIRE LINK
JA.36	ERJ6GEY0R00	WIRE LINK
JA.37	ERJ6GEY0R00	WIRE LINK
JA.38	ERJ6GEY0R00	WIRE LINK
JA.4	ERJ8GEY0R00	WIRE LINK
JA.5	ERJ6GEY0R00	WIRE LINK
JA.6	ERJ8GEY0R00	WIRE LINK
JA.7	ERJ8GEY0R00	WIRE LINK
JA.8	ERJ6GEY0R00	WIRE LINK
JA.9	ERJ6GEY0R00	WIRE LINK
JA1	ERJ6GEY0R00	WIRE LINK
JA10	ERJ6GEY0R00	WIRE LINK
JA11	ERJ6GEY0R00	WIRE LINK
JA12	ERJ6GEY0R00	WIRE LINK
JA13	ERJ6GEY0R00	WIRE LINK
JA14	ERJ6GEY0R00	WIRE LINK
JA15	ERJ6GEY0R00	WIRE LINK
JA16	ERJ6GEY0R00	WIRE LINK
JA17	ERJ6GEY0R00	WIRE LINK
JA18	ERJ6GEY0R00	WIRE LINK
JA19	ERJ6GEY0R00	WIRE LINK
JA2	ERJ6GEY0R00	WIRE LINK
JA20	ERJ6GEY0R00	WIRE LINK
JA21	ERJ6GEY0R00	WIRE LINK
JA22	ERJ6GEY0R00	WIRE LINK
JA23	ERJ6GEY0R00	WIRE LINK
JA24	ERJ6GEY0R00	WIRE LINK
JA25	ERJ6GEY0R00	WIRE LINK
JA26	ERJ6GEY0R00	WIRE LINK
JA28	ERJ6GEY0R00	WIRE LINK
JA29	ERJ6GEY0R00	WIRE LINK
JA3	ERJ6GEY0R00	WIRE LINK
JA30	ERJ6GEY0R00	WIRE LINK
JA31	ERJ6GEY0R00	WIRE LINK
JA32	ERJ6GEY0R00	WIRE LINK
JA33	ERJ6GEY0R00	WIRE LINK
JA4	ERJ6GEY0R00	WIRE LINK
JA5	ERJ6GEY0R00	WIRE LINK
JA6	ERJ6GEY0R00	WIRE LINK
JA7	ERJ6GEY0R00	WIRE LINK
JA8	ERJ6GEY0R00	WIRE LINK
JA9	ERJ6GEY0R00	WIRE LINK
JK2301	TJB18644	AV TERMINAL
JK3001	TJS8E007	21PIN TERMINAL
JK3101	TJS8E007	21PIN TERMINAL
JSB.5	ERJ6GEY0R00	WIRE LINK
JSE.31	ERJ6GEY0R00	WIRE LINK
JSE011	ERJ6GEY0R00	WIRE LINK
JSE012	ERJ6GEY0R00	WIRE LINK
JSE013	ERJ6GEY0R00	WIRE LINK
JSE014	ERJ6GEY0R00	WIRE LINK
JSE015	ERJ6GEY0R00	WIRE LINK
JSE016	ERJ6GEY0R00	WIRE LINK
JSE032	ERJ6GEY0R00	WIRE LINK

COILS

L001	TLT100K991R	COIL
L002	TLT047K991R	COIL
L102	EIV7EN200B	COIL
L103	TLT100K991R	COIL

Ref No.	Part No.	Description
L104	EIV7EN201B	COIL
L105	TLT100K991R	COIL
L106	TLT022K991R	COIL
L109	TLTR47K991R	COIL
L111	ELESNR82MA	COIL
L112	EXCELSA35T	COIL
L113	EXCELSA35T	COIL
L202	TLT068K991R	COIL
L251	EXCELSA35T	COIL
L301	TLT047K991R	COIL
L302	EXCEMT101BT	COIL
L303	EXCEMT101BT	COIL
L304	EXCEMT101BT	COIL
L352	SDL-4101	COIL
L353	SDL-4101	COIL
L354	SDL-4101	COIL
L552	ELH5L421	COIL
L553	ELC08D055	COIL
L554	297-23293	COIL
L601	TLT047K991R	COIL
L602	EXCELDR35V	COIL
L603	TLT047K991R	COIL
L604	EXCELDR35V	COIL
L606	TLT015K991R	COIL
L607	EXCELSA35T	COIL
L701	ELC10D006	COIL
L801	298-19711	COIL
L802	TLT022K991R	COIL
L803	ELF18D490F	COIL
L804	ELESN4R7KA	COIL
L805	298-32858001	COIL
L851	EXCELDR35V	COIL
L852	EXCELSA35T	COIL
L853	ELEIE470KA	COIL
L854	ELEIN470KA	COIL
L855	ELEIN470KA	COIL
L856	ELEIN470KA	COIL
L901	EXCELSA24T	COIL
L902	EXCELSA24T	COIL
L1051	TLT331K991R	COIL
L1201	TLT047K991R	COIL
L1202	TLT047K991R	COIL
L1203	TLT047K991R	COIL
L1204	EXCELDR35V	COIL
L2101	TLT100K991R	COIL
L2102	TLT3R9K991R	COIL
L2103	EXCELSA35T	COIL
L2104	EXCELSA35T	COIL
L3151	EXCEMT101BT	COIL
L3152	EXCEMT101BT	COIL
L3153	EXCEMT101BT	COIL
L3154	EXCEMT101BT	COIL
L3155	ELEBT6R8KA	COIL
L3156	ELEBT6R8KA	COIL
L3158	EXCELSA39V	COIL
L3501	EXCELDR35V	COIL
L3502	EXCELDR35V	COIL
L3503	ELESN4R7KA	COIL
L3504	EXCELSA35T	COIL

TRANSISTORS

Q101	BF370-126	TRANSISTOR
Q102	BF370-126	TRANSISTOR
Q103	BC847B	TRANSISTOR
Q201	BC847B	TRANSISTOR
Q202	BC847B	TRANSISTOR
Q251	2SD1328STX	TRANSISTOR
Q252	2SD1328STX	TRANSISTOR
Q253	BC847B	TRANSISTOR
Q301	BC857B	TRANSISTOR
Q302	BC847B	TRANSISTOR
Q303	BC857B	TRANSISTOR
Q304	BC847B	TRANSISTOR
Q305	BC857B	TRANSISTOR
Q306	BC847B	TRANSISTOR
Q307	BC847B	TRANSISTOR
Q308	BC847B	TRANSISTOR
Q309	BC847B	TRANSISTOR
Q310	BC847B	TRANSISTOR
Q311	BC847B	TRANSISTOR
Q351	2SA1767	TRANSISTOR
Q352	2SA1767	TRANSISTOR
Q353	2SA1767	TRANSISTOR
Q451	BC847B	TRANSISTOR
Q501	BC847B	TRANSISTOR
Q502	BC847B	TRANSISTOR
Q503	2SD836-AL	TRANSISTOR
Q504	BC847B	TRANSISTOR
Q551	2SD1577LB	TRANSISTOR
Q552	2SC1473-RN	TRANSISTOR
Q701	BC857B	TRANSISTOR
Q801	2SC1573	TRANSISTOR
Q802	S2000NLBMA	TRANSISTOR
Q851	2SD1273PLB	TRANSISTOR
Q852	TFD312SOF632	DIODE
Q901	BC847B	TRANSISTOR
Q902	BC847B	TRANSISTOR
Q903	BC847B	TRANSISTOR
Q904	BC857B	TRANSISTOR
Q905	BC847B	TRANSISTOR
Q906	BC847B	TRANSISTOR
Q907	BC857B	TRANSISTOR
Q908	2SA1535ARLB	TRANSISTOR
Q909	2SC3944ARLB	TRANSISTOR
Q1201	BC847B	TRANSISTOR
Q1202	BC847B	TRANSISTOR
Q1205	BC847B	TRANSISTOR
Q1206	BC847B	TRANSISTOR
Q1207	BC847B	TRANSISTOR
Q1208	BC857B	TRANSISTOR
Q2101	BC860B	TRANSISTOR
Q2102	BC860B	TRANSISTOR
Q2301	BC857B	TRANSISTOR
Q2302	BC857B	TRANSISTOR
Q2305	2SD1328STX	TRANSISTOR
Q2306	2SD1328STX	TRANSISTOR
Q2307	BC860B	TRANSISTOR
Q2308	BC857B	TRANSISTOR
Q2309	BC860B	TRANSISTOR
Q2310	BC860B	TRANSISTOR
Q3001	2SC1318-S	TRANSISTOR
Q3004	BC847B	TRANSISTOR
Q3005	BC847B	TRANSISTOR
Q3006	2SC1318-S	TRANSISTOR
Q3011	BC857B	TRANSISTOR
Q3012	2SD1328STX	TRANSISTOR
Q3013	2SD1328STX	TRANSISTOR

RESISTOR

R.604	ERJ6GEY0R00	WIRE LINK		
R.622	ERJ6GEY0R00	WIRE LINK		
R001	ERJ6GEYJ223	S.M.CARB 0.1W	5%	22KΩ
R002	ERJ6GEYJ101	S.M.CARB 0.1W	5%	100Ω
R003	ERJ6GEYJ101	S.M.CARB 0.1W	5%	100Ω
R004	ERJ6GEYJ101	S.M.CARB 0.1W	5%	100Ω
R107	ERJ6GEY0R00	WIRE LINK		
R109	ERJ6GEY0R00	WIRE LINK		
R113	ERJ6GEYJ153	S.M.CARB 0.1W	5%	15KΩ
R116	ERJ6GEYJ103	S.M.CARB 0.1W	5%	10KΩ
R117	ERJ6GEYJ683	S.M.CARB 0.1W	5%	68KΩ
R118	ERJ6ENF4701	S.M.CARB 0.1W	1%	4K7Ω
R119	ERJ6ENF1202	S.M.CARB 0.1W	1%	1K2Ω

Ref No.	Part No.	Description				
R120	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R121	ERJ6GEYJ201	S.M.CARB	0.1W	5%	200Ω	
R122	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R123	ERJ6GEY0R00	WIRE LINK				
R124	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R125	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R126	EVNDXAA03B53	CONTROL			5KΩ	
R127	ERDS1TJ121	CARBON	0.5W	5%	120Ω	
R128	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R129	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R130	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R131	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R132	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R133	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R134	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R136	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R137	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R138	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R139	ERJ6GEY0R00	WIRE LINK				
R141	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R142	ERJ6GEY0R00	WIRE LINK				
R143	ERJ6GEY0R00	WIRE LINK				
R145	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R146	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R147	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω	
R149	ERJ6GEYJ181	S.M.CARB	0.1W	5%	180Ω	
R201	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R203	ERJ6GEY0R00	WIRE LINK				
R204	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R205	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R206	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R207	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R208	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R209	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R210	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R253	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R255	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R256	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R260	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R261	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R262	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R263	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R264	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R265	ERD25TJ2R2	CARBON	0.25W	5%	2R2Ω	
R266	ERD25TJ2R2	CARBON	0.25W	5%	2R2Ω	
R267	ERF7ZK4R7	WOUND	7W	10%	4R7Ω	⚠
R268	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R269	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R271	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R272	ERF7ZK5R6	WOUND	7W	10%	5R6Ω	⚠
R273	ERD25TJ273	CARBON	0.25W	5%	27KΩ	
R301	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R302	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R303	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R305	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R306	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R307	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R308	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R309	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R310	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390Ω	
R311	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R312	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R313	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R314	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R315	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R316	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3Ω	
R321	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R322	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R323	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R324	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	

Ref No.	Part No.	Description				
R351	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R352	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R353	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R354	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R355	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R356	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R357	ERG1SJ683	METAL	1W	5%	680Ω	
R358	ERG1SJ683	METAL	1W	5%	680Ω	
R359	ERG1SJ683	METAL	1W	5%	680Ω	
R363	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R364	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R365	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R366	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R367	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R368	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R369	ERD25TJ203	CARBON	0.25W	5%	20KΩ	
R370	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2Ω	
R372	ERQ12AJ121	FUSIBLE	0.5W	5%	120Ω	⚠
R373	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22Ω	
R374	ERD25TJ274	CARBON	0.25W	5%	270KΩ	
R375	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680KΩ	
R376	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R377	ERQ12HKR82	FUSIBLE	0.5W	10%	R82Ω	⚠
R381	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R382	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R383	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R451	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R452	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R453	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R455	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R456	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R457	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R458	ERD25TJ1R5	CARBON	0.25W	5%	1R5Ω	
R459	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R460	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R461	ERDS1TJ471	CARBON	0.5W	5%	470Ω	
R462	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R463	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R464	ERW12PKR68	WIREWOUND	0.5W	10%	R68Ω	⚠
R465	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R466	ERO25CKF1801	METAL	0.25W	1%	1K8Ω	⚠
R467	ERO25CKF1801	METAL	0.25W	1%	1K8Ω	⚠
R471	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R472	ERDS1TJ4R7	CARBON	0.5W	5%	4R7Ω	
R501	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R502	ERJ6GEYJ560	S.M.CARB	0.1W	5%	56Ω	
R503	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R504	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R506	ERD25TJ560	CARBON	0.25W	5%	56Ω	
R507	ERQ14AJ3R3	METAL	0.25W	5%	3R3Ω	⚠
R509	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R510	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R511	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R512	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R513	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R514	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R551	ERW2PKR47	WIREWOUND	2W	10%	0R47Ω	⚠
R553	ERG1SJ152	METAL	1W	5%	1K5Ω	
R554	ERQ14AJW101	METAL	0.25W	5%	100Ω	⚠
R558	ERDS1TJ124	CARBON	0.5W	5%	120KΩ	
R561	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R562	ERJ6GEYJ155	S.M.CARB	0.1W	5%	1M5Ω	
R563	ERJ6GEYJ155	S.M.CARB	0.1W	5%	1M5Ω	
R566	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R567	ERJ6GEYJ274	S.M.CARB	0.1W	5%	270KΩ	
R601	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R602	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R603	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R605	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R606	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	

Ref No.	Part No.	Description				
R607	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R608	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R609	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R610	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R611	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R612	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R613	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R614	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R615	ERJ6GEYJ333	S.M.CARB	0.1W	5%	33KΩ	
R616	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R618	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R619	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R623	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω	
R701	ERQ12AJ101	FUSIBLE	0.5W	5%	100Ω	⚠
R702	ERQ12HJ220	METAL	0.5W	5%	22Ω	⚠
R703	ERG2FJ821	METAL	2W	5%	820Ω	⚠
R704	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R705	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R708	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R709	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R710	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R711	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R712	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R713	ERG1SJ101	METAL	1W	5%	100Ω	
R801	ERG3FJ682H	METAL	3W	5%	6K8Ω	⚠
R802	ERG2FJ472	METAL	2W	5%	4K7Ω	⚠
R803	ERX12SJWR47	METAL	12W	5%	R47	
R804	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R805	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R806	ERG1SJ823	METAL	1W	5%	820Ω	
R807	ERQ25CKF1201	METAL	0.25W	1%	1K2Ω	⚠
R808	232266296706	THERMISTOR				
R809	ERQ25CKF1332	METAL	0.25W	1%	13KΩ	⚠
R810	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R811	EVMEASA00B33	CONTROL			3KΩ	
R812	ERDS1TJ220	CARBON	0.5W	5%	22Ω	
R813	ERD50FJ334	CARBON	0.5W	5%	330KΩ	⚠
R814	ERF7ZK2R7	WOUND	7W	20%	2R7Ω	⚠
R817	ERG3FJ470	METAL	3W	5%	47Ω	⚠
R818	ERD50FJ564	CARBON	0.5W	5%	1KΩ	⚠
R819	ERD50FJ564	CARBON	0.5W	5%	1KΩ	⚠
R820	ERD75TAJ825	CARBON	0.75W	5%	8M2Ω	⚠
R852	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R853	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R854	ERDS1TJ474	CARBON	0.5W	5%	470KΩ	
R855	ERG2FJ223	METAL	2W	5%	22KΩ	⚠
R856	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R901	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R902	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R903	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R904	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R905	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R906	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R907	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R908	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R909	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R910	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R911	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R913	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R914	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R915	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω	
R916	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R917	ERJ6GEYJ121	S.M.CARB	0.1W	5%	120Ω	
R919	ERQ14AJ390	FUSIBLE	0.25W	5%	39Ω	⚠
R920	ERQ14AJ390	FUSIBLE	0.25W	5%	39Ω	⚠
R921	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R922	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R923	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R924	ERDS1FJ390	CARBON	0.5W	5%	39Ω	⚠
R925	ERJ6GEY0R00	WIRE LINK				

Ref No.	Part No.	Description				
R926	ERJ6GEY0R00	WIRE LINK				
R927	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R928	ERD25TJ2R7	CARBON	0.25W	5%	2R7Ω	
R929	ERDS1FJ471	CARBON	0.5W	5%	470Ω	⚠
R930	ERD25TJ2R7	CARBON	0.25W	5%	2R7Ω	
R931	ERDS1FJ390	CARBON	0.5W	5%	39Ω	⚠
R932	ERDS1FJ101	CARBON	0.5W	5%	100Ω	⚠
R933	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R934	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R935	ERQ14AJ3R9	FUSIBLE	0.25W	5%	3R9Ω	⚠
R936	ERQ1CJP331	METAL	1W	5%	330Ω	⚠
R937	ERQ14AJ100	METAL	0.25W	5%	10Ω	⚠
R1201	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R1202	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1203	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1204	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1205	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1206	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1207	ERD25TJ331	CARBON	0.25W	5%	330Ω	
R1208	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R1209	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1210	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1212	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1213	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1214	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1215	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1216	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1217	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1218	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1219	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1220	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1221	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1222	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1224	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1225	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1226	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1227	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1229	ERJ6GEY0R00	WIRE LINK				
R1230	ERJ6GEY0R00	WIRE LINK				
R1231	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1232	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1233	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1235	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1236	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1237	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1238	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R1239	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω	
R1240	ERJ6GEYJ392	S.M.CARB	0.1W	5%	3K9Ω	
R1241	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1242	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1244	ERJ6GEY0R00	WIRE LINK				
R1245	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R1246	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1247	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1249	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1250	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1251	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R1252	ERX1SJ3R3	METAL	1W	5%	3R3Ω	
R1253	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1254	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R1255	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R1256	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R1257	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1258	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1260	ERDS1FJ121	CARBON	0.5W	5%	120Ω	⚠
R2101	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2102	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2103	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2104	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2105	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	

Ref No.	Part No.	Description				
R2106	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R2107	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2108	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2109	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2110	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2111	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R2301	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2302	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2303	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2313	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2314	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R2315	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R2316	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2318	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R2321	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2322	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2323	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R2324	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2325	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R2326	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2327	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2328	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R2329	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2330	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R2331	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R2332	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2333	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R2334	ERJ6GEY0R00	WIRE LINK				
R2335	ERJ6GEY0R00	WIRE LINK				
R2651	ERG2FJ221	METAL	2W	5%	220Ω	⚠
R2652	ERG2FJ221	METAL	2W	5%	220Ω	⚠
R2653	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R2654	ERDS1TJ151	CARBON	0.5W	5%	150Ω	
R3001	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3002	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3003	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3004	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R3005	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R3006	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R3007	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3008	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R3009	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R3010	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3011	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3012	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3013	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3015	ERJ6GEY0R00	WIRE LINK				
R3016	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3017	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R3019	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3020	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3022	ERD2FCG560	CARBON	2W	2%	56Ω	
R3024	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3025	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3026	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R3027	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
R3029	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
R3030	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3032	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
R3034	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R3036	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22Ω	
R3037	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R3038	ERD2FCG100	CARBON	2W	2%	10Ω	
R3039	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R3040	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	

Ref No.	Part No.	Description			
R3041	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R3042	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω
R3043	ERD2FCG100	CARBON	2W	2%	10Ω
R3044	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3045	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω
R3046	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3047	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω
R3048	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ
R3049	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3050	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3051	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3052	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3053	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3054	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3055	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3056	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3057	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3058	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R3059	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R3060	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω
R3062	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3063	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3064	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R3065	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R3066	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ
R3067	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ
R3068	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R3069	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R3070	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3071	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω
R3150	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3151	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3152	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3153	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3154	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R3155	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3156	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3157	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ
R3158	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω
R3502	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3504	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω
R3505	ERJ6GEY0R00	WIRE LINK			
R3508	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ
R3511	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ
R3512	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω

SWITCHES

S801	ESB91232A	SWITCH	⚠
S1201	EVQ23405R	SWITCH	
S1202	EVQ23405R	SWITCH	
S1203	EVQ23405R	SWITCH	
S1204	EVQ23405R	SWITCH	
S1205	EVQ23405R	SWITCH	

TRANSFORMERS

T501	5270103200	TRANSFORMER	
T551	ZTFH65008A	TRANSFORMER	⚠
T801	TLP8E1002	TRANSFORMER	⚠
T1201	ETP35KAN61ZU	TRANSFORMER	

FILTERS

X101	EFCS5M7MW3	CERAMIC FILTER
X103	G3355K	SAW FILTER
X105	EFCV3095A6	CHIP FILTER
X601	TSS2169-B	CRYSTAL
X1201	TSS120M2	CRYSTAL
X2101	TSS4004-B	CRYSTAL

DIFFERENCES FOR MODEL TX – 25S1DR

Ref No.	Part No.	Description		
MISCELLANEOUS COMPONENTS				
2)	TKY8E040	CABINET		⚠
3)	A59ECF20X12	C.R.T.		⚠
6)	TBM8E1479	MODEL LABEL		
7)	TKU8E00190	REAR COVER		⚠
9)	TNP197091AK	E P.C.B.		⚠
13)	TKP8E1127	LID		
14)	TBX8E026	POWER BUTTON		
15)	TBM153022	PANASONIC BADGE		
16)	TLK8E05115	DEGAUSS COIL		
	TKP8E1128	LED COVER		
	TPC8E4507	OUTER CARTON		
CAPACITORS				
C254	ECQM1H334J	FILM	50V	330nF
C259	ECQM1H334J	FILM	50V	330nF
C262	ECEA1HN2R2	ELECT	50V	2.2μF

Ref No.	Part No.	Description		
C265	ECEA1HN2R2	ELECT	50V	2.2μF
C552	ECWH15H102H	FILM	1500V	100pF
INTEGRATED CIRCUITS				
IC1203	X24C16P M1DR	EAROM		
RESISTOR				
R251	ERJ6GEYJ820	S.M.CARB	0.1W	5% 82Ω
R252	ERJ6GEYJ122	S.M.CARB	0.1W	5% 1K2Ω
R254	ERJ6GEYJ820	S.M.CARB	0.1W	5% 82Ω
R257	ERJ6GEYJ100	S.M.CARB	0.1W	5% 10Ω
R258	ERJ6GEYJ122	S.M.CARB	0.1W	5% 1K2Ω
R259	ERJ6GEYJ100	S.M.CARB	0.1W	5% 10Ω
R564	ERJ6GEYJ393	S.M.CARB	0.1W	5% 39KΩ
R706	ERJ6GEYJ242	S.M.CARB	0.1W	5% 2K4Ω
R707	ERJ6GEYJ911	S.M.CARB	0.1W	5% 910Ω

DIFFERENCES FOR MODEL TX – 28S1DR

Ref No.	Part No.	Description		
MISCELLANEOUS COMPONENTS				
2)	TKY8E041	CABINET		⚠
3)	A66ECF40X12	C.R.T.		⚠
6)	TBM8E1473	MODEL LABEL		
7)	TKU8E00200	REAR COVER		⚠
9)	TNP197091AL	E P.C.B.		⚠
13)	TKP8E1129	LID		
14)	TBX8E027	POWER BUTTON		
15)	TBM173052	PANASONIC BADGE		
16)	TLK8E05116	DEGAUSS COIL		
	TKP8E1130	LED COVER		
	TPC8E4506	OUTER CARTON		
	ECCF1H070DC5	CERAMIC	50V	0pF
CAPACITORS				
C254	222236516684	FILM	160V	100nF
C259	222236516684	FILM	160V	100nF
C262	ECQM1H474J	FILM	50V	470nF

Ref No.	Part No.	Description		
C265	ECQM1H474J	FILM	50V	470nF
C552	ECWH15H102J	FILM	1500V	1nF
INTEGRATED CIRCUITS				
IC1203	X24C16P–J1DR	EAROM		
RESISTOR				
R251	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100Ω
R252	ERJ6GEYJ272	S.M.CARB	0.1W	5% 2K7Ω
R254	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100Ω
R257	ERJ6GEYJ330	S.M.CARB	0.1W	5% 33Ω
R258	ERJ6GEYJ272	S.M.CARB	0.1W	5% 2K7Ω
R259	ERJ6GEYJ330	S.M.CARB	0.1W	5% 33Ω
R564	ERJ6GEYJ104	S.M.CARB	0.1W	5% 100KΩ
R706	ERJ6GEYJ332	S.M.CARB	0.1W	5% 3K3Ω
R707	ERJ6GEYJ122	S.M.CARB	0.1W	5% 1K2Ω

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